USERS' PROGRAM LIBRARY EUROPE
EUROPÄISCHE BENUTZER-PROGRAMMBIBLIOTHEK
BIBLIOTHÈQUE EUROPÉENNE DE PROGRAMMES UTILISATEURS
BIBLIOTECA EUROPEA DEGLI UTILIZZATORI

CATALOGUE

USERS' PROGRAM LIBRARY EUROPE

Programs recorded on magnetic cards

Price Preis Prix Prezzo	per program: SFr. 10.—

English: WHITE PAGES
Deutsch: GELBE SEITEN
Français: PAGES BLEUES
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HEWLETT PACKARD

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PROGRAM ORDER FORM
PROGRAMMBESTELLSCHEIN/BULLETIN DE COMMANDE DE PROGRAMMES/MODULO DI ORDINE DEI PROGRAMMI

To order programs please use only this form
Für Programmbestellungen bitte nur diesen Bestellschein verwenden

Veuillez n'utiliser que ce bulletin pour commander des programmes
Vogliate utilizzare soltanto questo modulo per i vostri ordini

In numerical order, please
Bitte in numerischer Reihenfolge

Dans l'ordre numérique, s.v.p.
In ordine numerico, per favore

1) _____ 5) _____ 9) _____
2) _____ 6) _____ 10) _____
3) _____ 7) _____ 11) _____
4) _____ 8) _____ 12) _____

	# _____ X _____ = _____

* **Minimum order size is 4 programs**
Mindestbestellung 4 Programme

Commande minimum 4 programmes
Ordine minimo 4 programmi

* **Invoices will be issued on request for orders more than 10 programs only**
Rechnungen werden auf Anfrage nur für Bestellungen von über 10 Programmen ausgestellt
Une facture ne sera établie que sur demande pour des commandes de plus de 10 programmes
Una fattura sarà emessa solo per ordini superiori a 10 programmi

* **Price per standard size program is 10 Swiss Francs**
Ein Standardformat-Programm kostet 10 Schweizer Franken

Le prix d'un programme standard est de 10 Francs Suisses
Il prezzo di un programma standard è di 10 franci svizzeri

* **Please check your prefered payment made**
Bitte wählen Sie Ihre bevorzugte Zahlungsart

Veuillez choisir votre mode de règlement
Vogliate scegliere il vostro modo di pagamento

☐ **Cheque enclosed payable to the order of "Hewlett Packard SA"**
Scheck beiliegend ausgestellt an «Hewlett-Packard SA»

Chèque inclus à l'ordre de «Hewlett-Packard SA»
Assegno incluso all'ordine della «Hewlett-Packard SA»

☐ **Bank transfer to Swiss Credit Bank, Geneva, Account No. 327-360**
Banküberweisung an Schweizerische Kreditanstalt, Genf, Konto-Nr. 327-360

Transfert de banque au Crédit Suisse, Genève, compte nº 327-360
Trasferimento bancario al Credito Svizzero, Ginevra, conto nº 327-360

* **Use one of your shipping labels or print clearly, please**
Adressenaufkleber oder Druckbuchstaben, bitte

Etiquette collante ou caractères d'imprimerie, s.v.p.
Etichetta adesiva o stampatello, per favore

Name
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Ort _____
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Città

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Code postal
C.A.P.

Country
Land _____
Pays
Paese

Date
Datum _____
Date
Data

Signature
Unterschrift _____
Signature
Firma

A l'attention de nos membres résidant en France:

Dispositions légales concernant le contrôle des changes

Vous pouvez effectuer vos payements à la bibliothèque Européenne de programmes utilisateurs par virement bancaire au Crédit Lyonnais, Annemasse, au compte de HEWLETT-PACKARD no d'agence 2134, compte no 42–314. Les règlements effectués par chèques émis par vous-même en notre faveur, sont formellement interdits.

Vous pouvez également effectuer un payement par mandat postal international en faveur de HEWLETT-PACKARD SA, compte postal 12–4959, Genève, Suisse. Nous déconseillons l'envoi de billets de banque sous pli postal comme payement à la bibliothèque Européenne de programmes. Nous vous prions de prendre bonne note de ces dispositions, et vous en remercions.

La bibliothèque Européenne de programmes utilisateurs

PROGRAM ORDERS

- Only orders using the official order form can be processed.
- Minimum order is 4 programs.
- All orders for less than 10 programs must be accompanied by payment, cheque or bank transfer for the relevant amount.
- Invoices are issued on request only for orders of more than 10 programs.
- Please list the programs ordered in numerical sequence, to facilitate retrieval at the Library.
- The payment can be in form of a cheque made payable to the order of Users' Program Library Europe, or by bank transfer to the Swiss Credit Bank, Geneva, Account Number 327–360.

  For residents of France cheque must be made payable to Credit Lyonnais, Annemasse to the Account of Hewlett-Packard or by bank transfer to agency number 2134, Account 42–314.
- Programs including description, listing and magnetic cards*, cost 10 Swiss Francs or the equivalent amount in convertible currency. Some programs are double or even triple volumes and cost twice or three times above price.

  * Program cards supplied by the Library are identified with the appropriate program number only. In the HP-67/97 STANDARD CATALOGUE the programs are available only without magnetic cards and cost 8 Swiss Francs or local currency equivalent.

PROGRAMMBESTELLUNGEN

- Es können nur auf dem offiziellen Programmformular einlaufende Bestellungen verarbeitet werden.
- Der Mindestbestellumfang sind 4 Programme.
- Bei allen Bestellungen unter 10 Programmen hat die Zahlung gleichzeitig zu erfolgen bzw. der Scheck oder die Banküberweisung lautend auf den entsprechenden Betrag ist beizulegen.
- Rechnungen werden auf Anfrage nur bei Bestellungen von mehr als 10 Programmen ausgestellt.
- Bitte geben Sie die bestellten Programme in numerischer Reihenfolge an – dies erleichtert ihr Aufsuchen in der Bibliothek.
- Die Bezahlung kann in Form eines Schecks erfolgen, zahlbar an die Europäische Benützer-Programm-Bibliothek, oder mittels Banküberweisung an die Schweizerische Kreditanstalt, Genf, Kontonummer 327–360.
- Die Programme umfassen eine Beschreibung, eine Programmauflistung und Magnetkarten*, der Preis ist 10 Schweizer Franken oder der entsprechende Betrag in konvertibler Landeswährung. Einige Programme sind Doppel- oder sogar Dreifachprogramme und kosten daher das Doppelte oder Dreifache des obigen Preises.

  * Von der Bibliothek gelieferte Programmkarten sind nur mit der entsprechenden Programmnummer gekennzeichnet. Programme gemäss dem HP-67/97 STANDARDKATALOG können nur ohne Magnetkarten geliefert werden und kosten 8 Schweizer Franken oder den entsprechenden Betrag in konvertibler Landeswährung.

COMMANDE DE PROGRAMMES

- Seuls les ordres adressés sur le formulaire correct peuvent être pris en considérations.
- La commande minimum est de 4 programmes.
- Toutes les commandes pour moins de 10 programmes doivent être accompagnées du paiement de la somme exacte, soit par chèque ou transfert bancaire.
- Sur demande, des factures peuvent être envoyées uniquement pour les commandes de plus de 10 programmes.
- Veuillez donner la liste des programmes par ordre numérique, pour faciliter le recouvrement au Club.
- Le paiement peut être fait sous forme de chèque à l'ordre du Club des Utilisateurs – Europe, ou par transfert bancaire au Crédit Suisse à Genève, compte no 327–360.

  Pour les personnes résidant en France, le transfert bancaire doit être fait au Crédit Lyonnais, Annemasse, au compte de Hewlett-Packard à l'agence no 2134, compte 42–314.
- Les programmes comprenant la description, le listage et les cartes magnétiques*, coûtent 10 Francs Suisses ou le montant équivalent en monnaie étrangère convertible. Certains programmes, doubles ou triples, coûtent deux ou trois fois le prix ci-dessus.

  * Les cartes de programme fournies par le Club ne sont identifiées que par leur numéro de programmes. Dans le CATALOGUE STANDARD HP-67/97, les programmes sont fournis sans les cartes magnétiques et coûtent 8 Francs Suisses ou l'equivalent en monnaie étrangère.

ORDINI DEI PROGRAMMI

- Soltanto gli ordini ricevuti sui moduli ufficiali d'ordine possono essere evasi.
- Ordine minimo di 4 programmi.
- Gli ordini fino a 10 programmi devono essere accompagnati da un assegno od un trasferimento bancario per l'importo equivalente.
- Su richiesta, può essere emessa fattura, ma solo per ordini superiori a 10 programmi.
- Vogliate elencare i programmi selezionati in progressione numerica, per agevolare la ricerca nella Biblioteca.
- Il pagamento può essere fatto a mezzo assegno intestato alla «Users' Library Europe» oppure tramite trasferimento bancario sul conto numero 327–360 del «Credito Svizzero» a Ginevra.
- Il costo dei programmi che includono la descrizione, il listato e le schede magnetiche preregistrate* è di Franchi Svizzeri 10.– od in altra moneta convertibile per l'importo equivalente. Poiché alcuni dei programmi sono volumi doppi ed anche tripli, il prezzo puo essere superiore (di due o tre volte a quello normale).

  * Le schede dei programmi fornite dalla Biblioteca sono identificate soltanto mediante il numero appropriato del programma. Nel CATALOGO STANDARD HP-67/97, i programmi sono disponibili solamente senza carte magnetiche. Il loro prezzo è di Franchi Svizzeri 8.– oppure l'equivalente in moneta locale.

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67-DISPLACEMENT NACH 2ND MM-METHODE 65074D
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67-AZIMUTH OF THE SUN (TIME AZIMUTH) 60286D
67-AZIMUTH OF THE SUN -(ZENITH ANGLE AZIMUTH) 60287D
67-CADRANS SOLAIRES SUR UN PLAN HORIZONTAL ET UN PLAN VERTICAL 70042D
67-DUREE DU JOUR ET AUTRES CARACTERISTIQUES SOLAIRES 70043D
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67-NEW OR FULL MOON DAY 60123D
67-TIME-ARITHMETIC 60341D
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67-DUTCH LOTTO NUMBER GENERATOR 60591D
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67-GRAND PRIX FORMULA ONE 60548D
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67-MAGIC SQUARE OF 16 FIELDS 60234D
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67-NUCLEUS N 60629D
67-PLANET LANDING SIMULATOR 60413D
67-PRINCEP'S PUZZLE 60596D
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67-RONDE DES REGISTRES 70078D
67-ROULETTE MONTE CARLO 65014D
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67-SUPER MASTERMIND 70084D
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67-TRIPLE NIMB PLUS 60612D
67-YATZY 60219D
67-ZAHLENAKROBATIK (MIT SHIKANEN) 65096D
67-ZAHLENAKROBATIK-TRICKREICH 65097D
67-ZAHLENKETTE - CHAIN 65044D
67-ZALENAKROBATIK-PATIENCE 65098D
67-97 BIORYTHMES 70111D
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97-BRIDGE . TORNEI MITCHELL 16 TAVOLI . PUNTEGGI FINALI 75012D
97-BRIDGE . TORNEI MITCHELL 18 TAVOLI . PUNTEGGI FINALI 75011D
97-BRIDGE . TORNEI MITCHELL 14 TAVOLI . PUNTEGGI FINALI 75013D
97-BRIDGE . TORNEI MITCHELL TAVOLI DISPARI . PUNTEGGI FINALI 75010D
97-BRIDGE TOURNAMENT RESULTS 60290D
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97-FASTER MIND 60384D
97-GAME OF LIFE (23 X 31) 60173D
97-HOW TO GAMBLE IF YOU MUST ROUGE ET NOIR CASINO 60619D
97-LOTERIES 70011D
97-MASTER MIND (VERSION RAPIDE) 70056D
97-NICOMA NUMBER FINDING GAME 60398D
97-VERY HIGH/VERY LOW 9,999,999,999 60557D

99.99 OTHER

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67-BIORHYTHMUS UND KOINZIDENZ 65013D
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67-FLAG TEST ROUTINE 60317D
67-MODEL RAILWAY LAYOUT 60443D
67-MORE REGISTERS WITH 5 DIGITS 60389D
67-NOTE BOOK 60526D
67-RANKING SPORT RESULTS 60415D
67-REGISTER DOUBLING 60146D
67-REGISTERS-CHECKING 60531D
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67-TYPEWRITER 60527D
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97-NUMBER OF DIGITS (SUBROUTINE) 60279D

PROGRAM ABSTRACT

KURZBESCHREIBUNG

PRÉSENTATION INDIVIDUELLE

COMPENDIO

PROGRAM ABSTRACTS

60001D 67-EXXX-DISTRIBUTION

THIS PROGRAM COMPUTES EXP(X).

044PROGRAM STEPS
JOHN VAN THIELEN
B - STABROEK

60002D 67-GENERAL BALLISTIC PROBLEM 2

AFTER THE INPUT OF VO,ALPHA, K AND DELTA-T, THIS PROGRAM COMPUTES THE ORBIT OF A PROJECTILE IN X-Y-STYLE. BECAUSE K (AIR-RESISTANCE) AND G (STANDARD GRAVITY) DEPEND ON THE DISTANCE BETWEEN THE PROJECTILE AND THE EARTH, SOME CORRECTIONS ARE MADE WITH A FEED-BACK CONTROL SYTEM (MAX. HEIGHT=30 KM) YOU CAN COMPUTE X AND Y AFTER EVERY DELTA-T OR TOTAL TIME AND MAX. DISTANCE BETWEEN START AND FALL DIRECTLY.

188PROGRAM STEPS
JOHN VAN THIELEN
B - STABROEK

60003D 67-EXACT INTEGRAL 1

THIS PROGRAM COMPUTES THE INTEGRAL EXACTLY WHEN A,B,C,D AND E ARE GIVEN.

101PROGRAM STEPS
JOHN VAN THIELEN
B - STABROEK

60004D 67-RIEMANN-ZETA FUNCTION N.4

GIVEN AN ORIGINAL RIEMANN-ZETA FUNCTION F(N),THIS PROGRAM COMPUTES FN IF N=1 TO N=INFINATE,STEP BY STEP BY STEP TO MAKE A GRAPH, OR DIRECTLY FOR EVERY N, IF M,S ARE GIVEN.

078PROGRAM STEPS
JOHN VAN THIELEN
BEL - STABROEK

60005D 67-CONVERSION OF NEWTON POLYNOMIALS INTO POWER SERIES

THIS PROGRAM IS AN OPTIONAL COMPLEMENT TO 50394-D, WHICH GIVES THE COEFFICIENTS OF A SERIES OF NEW TON POLYNOMIALS UP TO DEGREE 9.THIS PROGRAM CONVERTS THOSE COEFFICIENTS INTO COEFFICIENTS OF AN ORDINARY POWER SERIES WITH ARGUMENT X. NOW IT IS EASY TO INTEGRATE OR DIFFERENTIATE.

185PROGRAM STEPS
KURT NETZER
A - SCHRUNS

60006D 67-STRESS IN THE BARS OF A LATTICE GIRDER

THE PROGRAM COMPUTES ALL BEAM LENGTHS, ANGLES, AND FORCES IN THE BARS OF A SYMMETRICAL LATTICE GIRDER WITH INCLINED UPPER CHORD (THE NUMBER OF PANELS IS UNLIMITED) TWO LOAD CASES (DISTRIBUTED LOAD ON THE UPPER OR BOTTOM CHORD) ARE POSSIBLE. THE DIAGONAL BARS ARE DESIGNED AS TENSION DIAGONALS.

164PROGRAM STEPS
CLAUS M DACHSELT
BRD - WITTEN-ANNEN

60007D 67-TEST FOR NORMALITY (SHAPIRO WILK)

THIS PROGRAM ORDERS UP TO 20 OBSERVATIONS AND TESTS THE DISTRIBUTION FOR NORMALITY ACCORDING TO THE PROCEDURE OF SHAPIRO AND WILK. IT COMPUTES ALSO HIGHEST VALUE, LOWEST VALUE, RANGE, ARITHMETICAL MEAN, STANDARD DEVIATION, RELATIVE STANDARD DEVIATION AND MEDIAN OF THE SAMPLE.

185PROGRAM STEPS

60007D (CONTD)

DR MANFRED SOEFFTGE
BRD - WEINHEIM

60008D 67-DEFINITE INTEGRAL 7 SIMPSON

WITH A CONTINUOUS AREA BETWEEN THE GIVEN LIMITS THE PROGRAM APPROXIMATES : -
1.AREA UNDER THE CURVE
2.VOLUME TRACED OUT BY THAT AREA REVOLVED
3.CENTROIDS OF THAT AREA
4.CENTRE OF GRAVITY OF THE VOLUME TRACED OUT
5.LENGTH OF THE CURVE
6.SURFACE AREA TRACED OUT BY CURVE REVOLVED
7.CENTROID OF THE CURVE.....USING 'SIMPSONS RULE'

103PROGRAM STEPS
LAWRENCE B HARTLEY
UK - BRIERFIELD

60009D 67-HUNTING GAME

PROGRAM SIMULATES A DEER-STALKING. THE ONE WHO BRINGS BACK THE MOST ANIMALS IS THE WINNER. BUT BE CAREFUL AND DO NOT SHOOT YOUR HUNTRY COMPANY! IT IS TRICKY - IF YOU WOUND A WILD BEAR OR A POACHER THEY WILL ATTACK YOU AND, IF YOU DO NOT KILL THEM, KILL YOU. GOOD LUCK!

170PROGRAM STEPS
MICHAEL TARNOWSKI
D - WIESBADEN

60010D 67-A STRAIGHT-LINE PROBLEM

BY GIVEN CO-ORDINATES OF TWO POINTS PROGRAM CALCULATES:
1.LINE'S GRADIENT
2.DISTANCE BETWEEN THE TWO POINTS
3.CO-ORDINATES OF CENTRAL POINT OF THE DISTANCE LINE
4.GRADIENT ANGLE OF THE LINE

064PROGRAM STEPS
MICHAEL TARNOWSKI
BRD - WIESBADEN

60011D 67-SUBROUTINES FOR SECTION PROPERTIES OF STEEL HE-A (I.P.B.L.)

FOR STORING ALL NEEDED SECTION PROPERTIES OF STEEL I-SHAPE BEAMS (H,F,JX,JY) YOU NEVER HAD ENOUGH REGISTERS AVAILABLE AND HAD TO USE DATA CARDS. NOW YOU CALCULATE THEM USING ONLY HEIGHT AS PARAMETER. MAXIMUM DEVIATION IS 2 PER CENT IN UNSAFE DIRECTION, CHARACTERISTIC MISTAKE IS UNDER 5 PER CENT SAFE DIRECTRION.

181PROGRAM STEPS
HANS-FLORIAN HOYER
BRD - STUTTGART

60012D 67-SUBROUTINES FOR SECTION PROPERTIES OF STEEL HE-M (I.P.B.V.)

FOR STORING ALL NEEDED SECTION PROPERTIES OF STEEL I-SHAPE BEAMS (H,F,JX,JY,) YOU NEVER HAD ENOUGH REGISTERS AVAILABLE AND HAD TO USE DATA CARDS. NOW YOU CALCULATE THEM USING ONLY HEIGHT AS PARAMETER. MAXIMUM DEVIATION IS 2 PER CENT IN UNSAFE DIRECTION, CHARACTERISTIC MISTAKE IS UNDER 5 PER CENT SAFE DIRECTION.

195PROGRAM STEPS
HANS-FLORIAN HOYER
BRD - STUTTGART

60013D 67-SUBROUTINE FOR SECTION-PROPERTIES OF STEEL HE-B (IPB)

FOR STORING ALL NEEDED SECTION PROPERTIES OF STEEL I-SHAPE BEAMS (H,F,JX,JY) YOU NEVER HAD ENOUGH REGISTERS AVAILABLE AND HAD TO USE DATA CARDS. NOW YOU CALCULATE THEM

60013D (CONTD)

USING ONLY HEIGHT AS PARAMETER. MAXIMUM DEVIATION IS 2 PER CENT IN UNSAFE DIRECTION, CHARACTERISTIC MISTAKE IS UNDER 5 PER CENT SAFE DIRECTION.

176PROGRAM STEPS
HANS-FLORIAN HOYER
D - STUTTGART

60014D 67-COAXIAL CABLE: CAPACITANCE, INDUCTANCE, IMPEDANCE

PROGRAM CALCULATE THE INDUCTANCE AND THE CAPACITANCE OF A COAXIAL CABLE, KNOWING THE DIAMETER OF CONDUCTOR, THE INSULATED DIAMETER AND THE PERMITTIVITY RELATIVE OF THE INSULATION MATERIAL. THE IMPEDANCE MAY ALSO BE CALCULATED KNOWING THE CAPACITANCE AND THE INDUCTANCE OR AFTER YOU HAVE CALCULATED THEM.

084PROGRAM STEPS
ENZO NOSEDA
I - COMO

60015D 67-MUTUAL CAPACITANCE OF UNSCREENED PAIRS OR QUADS

KNOWING THREE OF THESE PARAMETERS:
1) CONDUCTOR DIAMETER
2) INSULATED DIAMETER
3) PERMITTIVITY RELATIVE
4) MUTUAL CAPACITANCE
YOU MAY CALCULATE THE FOURTH YOU DO NOT KNOW. THE PROGRAM IS VALID FOR PAIRS OR QUADS CABLES.

111PROGRAM STEPS
ENZO NOSEDA
I - COMO

60016D 67-DAWSON'S INTEGRAL AND OTHERS

THIS PROGRAM GIVES DAWSON'S INTEGRAL AND MANY OTHERS, AS PER TWO ERROR FUNCTION, TWO EXPONENTIAL INTEGRALS - ONE WITH ITERATION, EN - AND EIGHT MORE. R5 TO 9 AND R5 REGISTERS ARE PROTECTED IN ORDER TO FURTHER CALCULES. ACCURACY, OBTAINED BY EXPANSION SERIES, IS VERY GOOD, WHEN ARGUMENTS ARE REAL AND POSITIVE UP TO 8.

212PROGRAM STEPS
FELIPE LANDA
CORDOBA

60017D 67-SEARCHING FOR A POINT

A POINT IN A 10,10 SQUARE WITH INTEGER COORDINATES, AND THROUGH THIS TWO STRAIGHTS ARE RANDOMLY GENERATED. THE SQUARE IS DIVIDED BY THE STRAIGHTS INTO FOUR PARTS. EACH PART GETS A NUMBER BETWEEN 1 - 4. IF YOU ASK THE CALCULATOR ABOUT A POINT IN THE SQUARE, IT DISPLAYS YOU THE ASSIGNED NUMBER OF THE PART IN WHICH THE ASKED POINT IS. YOU HAVE TO FIND OUT, WHERE THE GIVEN POINT IS.

178PROGRAM STEPS
JANOS GAL
H - SOPRON

60018D 67-RIEMANN-ZETA FUNCTION 5

PROGRAM COMPUTES RIEMANN-ZETA, FUNCTION 5 FOR N=0 TO N=INFINITE IF Z IS A COMPLEX NUMBER.

036PROGRAM STEPS
JOHN VAN THIELEN
B - STABROEK

60019D 67-COMPLEX-CURVE FITTING

PROGRAM COMPUTES THE LINEAR CURVE FIT OF GIVEN DATA (Z,X) WHEN Z IS COMPLEX. YOU CAN ALSO COMPUTE THE EXPECTED VALUE Z WHEN X IS GIVEN

60019D (CONTD)

AND THE CORRELATION COEFFICIENT.

177PROGRAM STEPS
JOHN VAN THIELEN
B - STABROEK

60020D 67-LINEAR CURVE FIT FOR COMPLEX NUMBERS

THIS PROGRAM COMPUTES THE COEFFICIENTS (A+BI) AND (C+DI) OF THE BEST FITTING CURVE M= (A+BI) N+ (C+DI) FOR GIVEN DATA PAIRS (M,N) WHEN THIS PAIRS ARE COMPLEX. THE PROGRAM COMPUTES ALSO THE CORRELATION COEFFICIENT R2 AND THE ESTIMATED M IF N IS GIVEN.

199PROGRAM STEPS
JOHN VAN THIELEN
B - STABROEK

60021D 67-ANY NORMAL OR GAUSSIAN PROBABILITY FUNCTION

THIS PROGRAM GIVES EVERY NORMAL OR GAUSSIAN PROBABILITY FUNCTION, P(KHI),Q(KHI),Z(KHI),A(KHI), PR(X<=KHI), P'R(X<=KHI),IN (KHI); Z..(N)(KHI).

221PROGRAM STEPS
FELIPE LANDA
E - CORDOBA

60022D 97-BOUNDARY-DEPTH IN A BIPARTITE TRAPEZ CHANNEL

PROGRAM DETERMINES AN APPROXIMATE VALUE FOR THE BOUNDARY-DEPTH BETWEEN FLOW AND GUSH. THE DEGREE OF ACCURACY IS SUFFICIENT FOR HYDRAULIC ENGINEERING.

211PROGRAM STEPS
GERHARD KRIZSANITS
A - LESBERSDORF

60023D 67-HYPERGEOMETRIC FUNCTION AND DISTRIBUTION

DISTRIBUTION VALUES ARE CALCULATED ON THE BASIS ON AN INITIAL FUNCTION VALUE OR ON THE LAST CALCULATED DISTRIBUTION VALUE. THE ARGUMENT MAY INCREASE OR DECREASE AT PLEASURE. THE INITIAL VALUE IS CHOSEN BY THE PROGRAM AMONG SIX POSSIBLE VALUES TO AVOID UNDERFLOW AND TO INCREASE SPEED. THE MEAN AND THE VARIANCE MAY BE FOUND AND A TABLE, EXCEPT FOR TRIVIAL VALUES, MAY BE GENERATED. THE FACTORIAL KEY IS NOT USED AND 69| IS NO LIMIT IN THE PRESENT PROGRAM.

218PROGRAM STEPS
SOREN VIDEBEK NIELSEN
DK - STRUER

60024D 67-TABLE OF FUNCTION-VALUES

SIMPLE, SHORT, FAST AND THEREFORE VERY USEFUL PROGRAM, SUPPORTING THE GENERATION OF FUNCTION TABLES AND FUNCTION GRAPHS. DISPLAY TIME AS WELL AS DISPLAY FORMAT CAN BE SELECTED FOR X AND F(X) INDEPENDANTLY,THUS ENABLING THE DRAWING OF A GRAPH WITHOUT THINKING ABOUT ROUNDING, AND WITHOUT INTERRUPTION AS FOR PRESSING KEYS OR WAITING FOR THE END OF DISPLY-TIME.

069PROGRAM STEPS
ERICH EHSES
D - BONN

60025D 67-"FLEXITIME" FLEXIBLE WORKING HOURS

CALCULATES TOTAL TIME WORKED DURING ANY TWO SESSIONS OF EACH DAY GIVING DAILY CHECK OF TIME OWED (DR.) OR IN HAND (CR.). AT THE END OF THE PRESELECTED PERIOD, OUTPUTS

60025D (CONTD)

TOTAL TIME WORKED, ALSO DR. OR CR. TO BE CARRIED FORWARD TO NEXT PERIOD.

068PROGRAM STEPS
NEIL HAMBLETON
UK - NANTWICH

60026D 67-CLAY-PIGEON-SHOOTING

THIS PROGRAM SIMULATES A CLAY-PIGEON-MACHINE. YOU MUST TRY TO SHOOT THE PIGEON WITHIN TWO MINUTES MAXIMUM. IF YOU MISS THE TARGET WITH THE FIRST SHOT, YOU WILL HAVE ONLY A SECOND ONE. THEN YOU MUST TRY WITH A NEW PIGEON. YOU HAVE TO BE VERY QUICK: THINK QUICK AND THEN PRESS THE KEYS QUICK. FOR EACH SHOT YOU HAVE ONLY A LIMITED TIME OF TWO SECONDS.

165PROGRAM STEPS
GERD SCHROEDER
D - POECKING

60027D 67-GAME OF THOUSAND -A GAME AT DICE

YOU AND THE HP THROW A DIE ONE AFTER THE OTHER. EACH OF YOU MUST FILL A MATRIX OF 9 FIELDS, SO THAT THE VERTICAL SUM IS AS NEAR AS POSSIBLE TO 1000. THE SEQUENCE YOU FILL THE FIELDS IS YOUR RESP. THE CALCULATOR'S. THE HP CANNOT THINK, BUT OFTEN YOU WILL MEAN IT, WHEN IT IS BETTER THAN YOU.

224PROGRAM STEPS
GERD SCHROEDER
D - POECKING

60028D 67-COMPASS DEVIATION AND COURSE DEVIATION

FROM 5 ARBITRARELY CHOSEN COMPASS-COURSES AND DEVIATIONS COEFFICIENTS ARE COMPUTED AND THE DEVIATION AT ANY COMPASS COURSE CAN BE CALCULATED. BETWEEN PROGRAM 1 AND PROGRAM 2 NO INPUTS NEEDED.

403PROGRAM STEPS
WILLEM BRUNINGS
NL - BILTHOVEN

60029D 97-PHYSICAL DATA (A.W.G.)

INPUT A NUMBER BETWEEN 0 AND 40 CALCULATOR DISPLAYS PHYSICAL DATA OF WIRE SELECT. DATA OUTPUTS:
1. A.W.G NUMBER
2. DIAMETER IN MM
3. SECTION IN MM2 (SQ. MIL.)
4. RESISTANCE PER KILOMETER
5. WEIGHT IN KG PER KILOMETER
6. FUSING CURRENT
7. RESISTANCE PER KG

224PROGRAM STEPS
JUAN LUIS GARCIA LAGO
E - MURCIA

60030D 67-RECTANGULAR BEAM AND SLAB DESIGN TO CP114

THE PROGRAM CALCULATES 'R', THE LEVER ARM FACTOR, LEVER ARM, PERCENTAGE TENSION AND COMPRESSION STEEL AREAS, SHEAR STRESS AND BOND STRESS AS WELL AS THE AXIS FACTOR FOR A GIVEN SET OF DIMENSIONS AND MATERIAL PROPERTIES.

222PROGRAM STEPS
MARK CRACKNELL
UK - LONDON

60031D 67-MEAN AND STANDARD DEVIATION

THE PROGRAM CALCULATES THE MEAN, STANDARD DEVIATION OF THE SAMPLE AND THE STANDARD DEVIATION OF THE POPULATION AS WELL AS THE RANGE FOR EITHER SINGLE OR PAIRED DATA. THE PROGRAM ALSO PROVIDES FOR WRITING

60031D (CONTD)

DATA ON TO A CARD OR FOR UPDATING A PREVIOUS DATA CARD.

166PROGRAM STEPS
MARK CRACKNELL
UK - LONDON

60032D 67-LINEAR ACCELERATION

IN LINEAR ACCELERATION THERE ARE FIVE VARIABLES: INITIAL VELOCITY U, FINAL VELOCITY V, ACCELERATION F, DISPLACEMENT S AND TIME T. ONLY FOUR VARIABLES APPEAR IN ANY SINGLE FORMULA. HAVING ENTERED VALUES FOR THREE VARIABLES THE PROGRAM ALLOWS YOU TO SELECT EITHER OF THE OTHER TWO.

221PROGRAM STEPS
MARK CRACKNELL
UK - LONDON

60033D 67-DE66 POLYNOMIAL SOLVER

PROGRAM FINDS THE ROOTS AND TURNING PTS OF ANY POLYNOMIAL UP TO DEGREE 6. PROVIDES THE OPTION OF VIEWING EACH ITERATION. SOLUTION IS BY NEWTON-RAPHSON METHOD.

216PROGRAM STEPS
MARK CRACKNELL
UK - LONDON

60034D 67-COORDINATES OF THIRD POINT

THIS PROGRAM FINDS THE COORDINATES OF THE THIRD POINT OF A TRIANGLE, GIVEN THE COORDINATES OF BOTH ENDS OF THE BASE AND EITHER:
1. THE BASE ANGLES OF THE TRIANGLE
2. THE LENGTHS OF THE TWO SIDES TO THE THIRD PT,
3. THE WHOLE CIRCLE BEARINGS OF THE TWO SIDES TO THE THIRD POINT.

224PROGRAM STEPS
MARK CRACKNELL
UK - LONDON

60035D 67-SIMILARITY COEFFICIENTS FOR DICHOTOMOUS DATA

WORKING WITH PRESENCE-ABSENCE ATTRIBUTES IN A 2X2 TABLE. THE PROGRAM CALCULATES: JACCARD, SIMPLE MATCHING, ROGERS AND TANIMOTO AND YULE COEFFICIENTS OF SIMILARITY AND THEN LISTS THE COMPLETE TALBLE.

118PROGRAM STEPS
IAN ZEILER
F - TALENCE

60036D 97-ZYKLOIDE, EPIZYKLOIDE; HYPOZYKLOIDE.

PROGRAM DETERMINES PAIRS OF COORDINATES OF A POINT ON A CIRCLE, WITH ROLLS ON A LINE OR ON THE OUTSIDE OF ANOTHER CIRCLE OR ON THE INSIDE OF ANOTHER CIRCLE.

203PROGRAM STEPS
GERHARD KRIZSANITS
A - LEOBERSDORF

60037D 67-SURFACES AND VOLUMES

PROGRAM CALCULATES: SURFACES OF: CIRCLES, PLANE TRIANGLES, TRAPEZIUMS, REGULAR POLYGONES AND SPHERES. THE PRINCIPAL SHAPE VOLUME OF ALL THESE STEPS IS ALSO CALCULATED. ALSO THE VOLUME OF A SPHERE IS PROVIDED.

095PROGRAM STEPS
ALES SLAETS
B - MECHELEN

60038D 67-HOW DO I CROSS THE RIVER?

THIS IS THE OL' FARMER GAME. A

60038D (CONTD)

FARMER WITH A FOX, A RABBIT, AND A BOX OF LETHUS WANTS TO CROSS THE RIVER. HE CAN ONLY TAKE ONE ITEM WITH HIM AT A TIME. THE FOX CAN'T STAY WITH THE RABBIT AND THIS CAN'T STAY WITH THE LETHUS. HIS QUESTION: HOW DO I CROSS THE RIVER?

141PROGRAM STEPS
ALEX SLAETS
B - MECHELEN

60039D 67-SOLVING A GONIOMETRIC EQUATION

THIS PROGRAM GIVES ALL SOLUTIONS OF AN EQUATION LIKE A
COS X + B SIN X = C.

065PROGRAM STEPS
KRIS HENDRIECKX
B - DEURNE

60040D 67-REACTION AND MEMORY GAME

A GAME FOR PEOPLE WITH GOOD REACTIONS AND REASONABLE MEMORY. YOU HAVE TO REACT ON THE DISPLAY FORMAT AND REMEMBER SOME OF THE DIGITS. THERE IS AN EASY AND A DIFFICULT GAME POSSIBLE.

106PROGRAM STEPS
KRIS HENDRIECKX
B - DEURNE

60041D 67-PARABOLA REFERENCES

GIVEN THE EQUATION OF A PARABOLA, PROGRAM FINDS THE AXIS OF SYMMETRY, THE TOP, CROSSINGS WITH X AND Y AXIS, ETC.

103PROGRAM STEPS
KRIS HENDRIECKX
B - DEURNE

60042D 67-POLYNOMIAL EVALUATION (0=<ORDER=<24)

PROGRAM CALCULATES F(X) FOR ANY X VALUE FOR POLYNOMIALS WITH DEGREE LESS THAN OR EQUAL TO 24.

048PROGRAM STEPS
KRIS HENDRIECKX
B - DEURNE

60043D 67-INVERSE FACTORIAL

FOR A GIVEN VALUE OF N!, THE PROGRAM COMPUTES N OR THE BEST APPROXIMATION. THE PROGRAM CAN ALSO HANDLE INPUTS GREATER THAN 10**00100 (N>69).

104PROGRAM STEPS
KRIS HENDRIECKX
DEURNE

60044D 67-GRAND MASTERMIND

IN THIS VERSION OF MASTERMIND, YOU HAVE TO GUESS TWICE (1 TO 9 COLOURS AND SHAPES). THE SHAPES AND COLOURS DO NOT HAVE TO BE GUESSED ON THE RIGHT PLACES. THE PROGRAM TELLS YOU HOW MANY COLOURS AND SHAPES ARE RIGHT AND HOW MANY TIMES A RIGHT COLOUR STANDS AGAINST A RIGHT SHAPE

172PROGRAM STEPS
KRIS HENDRIECKX
B - DEURNE

60045D 67-PLATONIC POLYHEDRONS

KNOWN ONLY ONE DATUM, THIS PROGRAM GIVES THE VALUES OF INTERSECTION, RADIUS OF CIRCUMSCRIBED SPHERE AND OF INSCRIBED SPHERE, AREA AND VOLUME, AND DIHEDRAL ANGLE OF THE FIVE PLATONIC POLYHEDRONS: TETRAHEDRON, HEXAHEDRON, OCTAHEDRON DODECAHEDRON AND ICOSAHEDRON.

219PROGRAM STEPS

60045D (CONTD)

FELIPE LANDA
E - CORDOBA

60046D 67-NORMAL PROBABILITIES

THIS PROGRAM FINDS P(A<Z OR X<B), P(Z OR X<A) AND P(Z OR X>A), WHERE Z IS STANDARD NORMAL VARIABLE, AND X IS STANDARDIZED NORMAL VARIABLE. ALSO FINDS THE PERCENTAGE OF THE AREA UNDER THE NORMAL CURVE FOR A GIVEN SIGMA. TABULATES, WITH A PRESELECTED INTERVAL, THE AREA Q(Z) AND THE ORDINATE Y(Z) OF THE NORMAL CURVE. TABULATION STARTS FROM ANY NUMBER AND STOPS AT ANY SELECTED NUMBER DOWN THE Z COLUMN OF THE STANDARD NORMAL TABLE.

294PROGRAM STEPS
ERNST E SIE
D - EMMENDINGEN

60047D 67-RED BLOOD CELL OSMOTIC FRAGILITY TEST

PROGRAM CALCULATES PERCENTAGE OF HAEMOLYSIS AT ANY NACL CONCENTRATION FROM 2.0 G/L TO 7.6 G.L AT T=20 CELSIUS GRADES AND PH 7.4 - THIS PROGRAM CONFRONTS CALCULATED VALUE WITH NORMAL VALUE.

213PROGRAM STEPS
MAURO FELLA
I - GENOVA

60048D 67-PELL EQUATION

PROGRAM FINDS THE LEAST SOLUTION OF THE PELL EQUATION (UP TO 10 DIGITS)

077PROGRAM STEPS
ATTILIO FARINA
I - TURIN

60049D 67-QUADRATIC RESIDUES

PROGRAM TESTS IF AN INTEGER Q IS A QUADRATIC RESIDUE OF A PRIME P.

051PROGRAM STEPS
ATTILIO FARINA
I - TURIN

60050D 67-EQUIVALENT SPACING

IN MECHANICAL AND ELECTRICAL DESIGN OF AN OVERHEAD TRANSMISSION LINES, VERY OFTEN YOU MUST CALCULATE WITH EQUIVALENT SPACING. EVERY HEAD OF TOWER HAS ITS OWN EQUIVALENT SPACING. BECAUSE IT CALCULATES FROM DIMENSIONS CROSSARMS AND DISTANCES BETWEEN CROSSARMS.

200PROGRAM STEPS
VELIMIR ILIJANIC
JU - ZAGREB

60051D 67-IDEAL SPAN

IF YOU HAVE ONE STRETCHEDLY FIELD WHICH IS NOT IN ONE LEVEL, AND WHICH HAS DIFFERENT SPANS, YOU CAN CALCULATE IN APPROXIMATE CALCULATION WITH ONE MATHEMATICAL SIZE-IDEAL SPAN.

051PROGRAM STEPS
VELIMIR ILIJANIC
YU - ZAGREB

60052D 67-TRAFALGAR

WHO WILL BE THE WINNER? YOU OR THE MACHINE? CALCULATOR IS A POWERFUL ADVERSARY IN THIS NAVAL BATTLE. IT RANDOMLY DISTRIBUTES TEN SHIPS OF VARIOUS SIZE ON ITS 10 X 10 GRID AND YOU DO THE SAME ON YOUR OWN GRID. CALCULATOR TRIES TO DETECT AND DESTROY YOUR SHIPS. TO WIN, YOU HAVE TO BE THE FIRST IN DESTROYING ALL ITS WON. TWO DEGREES OF DIFFICULTY.

60052D (CONTD)

438PROGRAM STEPS
YANNICK CCELC
F - LAVAL

60053D 67-TEMPERATURE VARIATIONS THROUGH A RADIATING ROD OR SLAB IN A FLUID

WE CONSIDER AN ISOTROPIC ROD OR SLAB BOUNDED BY TWO PARALLEL PLANES PERPENDICULAR WITH AN AXE(X). F(X) IS THE INITIAL TEMPERATURE OF THE SOLID WHICH EMITS GREY BODY RADIATION AND EXCHANGES SOME HEAT WITH A SURROUNDING FLUID. THE TEMPERATURE ALONG (X) IS GIVEN IN FUNCTION OF THE TIME, BY SOLVING THE LINEAR DIFFERENTIAL EQUATION OF CONDUCTION OF HEAT WITH A FINITE-DIFFERENCE METHOD.

153PROGRAM STEPS
BAILLY-SALINS RENE
F - IS-SUR-TILLE

60054D 67-TEMPERATURE VARIATIONS THROUGH A RADIATING DISK IN A FLUID

WE CONSIDER AN ISOTROPIC THIN DISK OF RADIUS R. F(R) IS THE INITIAL TEMPERATURE OF THE SOLID WHICH EMITS GREY BODY RADIATION AND EXCHANGES SOME HEAT WITH A SURROUNDING FLUID. THE SPATIAL AND TEMPORAL VALUES OF TEMPERATURE IN THE DISK CAN BE CALCULATED WITH GOOD APPROXIMATION BY SOLVING THE LINEAR DIFFERENTIAL EQUATION OF CONDUCTION OF HEAT WITH A FINITE-DIFFERENCE METHOD.

135PROGRAM STEPS
BAILLY-SALINS RENE
F - IS-SUR-TILLE

60055D 67-TEMP. VARIATIONS OF A RADIAT. WIRE IN A FLUID (ENDS AT CST. T.)

WE CONSIDER AN ISOTROPIC WIRE WITH THE ENDS KEPT AT CONSTANT TEMPERATURE. F(FX) IS THE INITIAL TEMPERATURE ALONG THIS WIRE EMITING GREY BODY RADIATION AND EXCHANGING SOME HEAT WITH A SURROUNDING FLUID. THE TEMPERATURE IN FUNCTION OF THE TIME IS OBTAINED BY SOLVING THE LINEAR DIFFERENTIAL EQUATION OF CONDUCTION OF HEAT WITH A FINITE-DIFFERENCE METHOD.

125PROGRAM STEPS
BAILLY-SALINS RENE
F - IS-SUR-TILLE

60056D 97-LONGITUDINAL CHROMATIC ABERRATION AS A PATH DIFFERENCE

USING CONRADY'S EQUATIONS AN AXIAL RAY IS TRACED TRIGONOMETRICALLY THROUGH AN OPTICAL SYSTEM AND THE CHROMATIC ABERRATION, EXPRESSED AS AN OPTICAL PATH DIFFERENCE, IS DETERMINED FOR EACH SURFACE AND FOR THE COMPLETE OPTICAL SYSTEM. CALCULATIONS MAY BE MADE IN INCH UNITS OR MILIMETRE UNITS. THE OUTPUT OF THE PATH DIFFERENCE IS IN UNITS OF WAVELENTHS.

163PROGRAM STEPS
JAMES HOUGHTON
UK - TETBURY

60057D 97-STAR SIGHT PLANNER

TO HELP THE NAVIGATOR PLANNING TWILIGHT SIGHTINGS, THIS PROGRAM: COMPUTES, AT ANY PLACE AND TIME, POSITION OF 42 WELL-DISTRIBUTED STARS, SELECTED AMONG THE 57 BRIGHT STARS LISTED IN THE NAUTICAL ALMANAC, TO PRODUCE A LIST OF THE STARS THAT ARE ABOVE THE HORIZON, WITH THEIR ALTITUDES AND AZIMUTHS; ON REQUEST, GIVES GMT HOUR OF DAWN OR DUSK. EACH DATA CARD (ACTUAL FOR 1972 - 1994 PERIOD, NEXT FOR 1995 - 2019) ENSURES 12' PRECISION

60057D (CONTD)

ON STARS POSITIONS.

224PROGRAM STEPS
JEAN THIBERGE
F - CHERBOURG

60058D 67-E24-SERIES STANDARD RESISTANCE VALUES FINDER (PART-1) 5%

ELECTRONICS CIRCUIT DESIGN, AFTER THEORETICAL COMPUTATION OF COMPONENT VALUES FOR PRACTICAL APPLICATION ALWAYS REQUIRED TO FIND A STANDARD, FIXED-COMPONENT VALUES WHICH ARE OFFERED BY INDUSTRY. THIS PROGRAM FOR EVERY ENTER OF RESISTANCE VALUE BETWEEN 10 OHMS AND 10 MEGOHM OR GREATER,COMPUTES:
1. NEAREST EQUIVALENT OF E24 SERIES OF STANDARD RESISTANCE VALUE ACCORDING TO IEC STANDARD
2. THE PERCENTAGE OF CHANGE
3. THE DIFFERENCE BETWEEN ENTER AND STANDARD VALUES.

154PROGRAM STEPS
KONSTANTY BOUFAL
PL - WILCZA

60059D 67-E24-SERIES STANDARD 5% RESISTANCE VALUES FINDER (PART-2)

THIS 127-STEP-PROGRAM IS A VERY SIMILAR, AND SHORTEST FORM OF "PART -1", EACH IS ABLE TO FIND ALSO A NEAREST EQUIVALENT OF E24-SERIE, STANDARD RESISTANCE VALUE ACCORDING TO IEC STANDARDS,BUT ALWAYS LESS THAN INPUT VALUE (NEVER GREATER). THE DIFFERENCE BETWEEN INPUT AND STANDARD VALUE IN OHM IS ALSO DISPLAYING. THE PROGRAM IS VERY USEFUL WHEN IT IS DESIRED TO FIND A STANDARD RESISTOR'S SERIES NETWORK EACH A TOTAL RESISTANCE HAVE EXACTLY THE SAME VALUE AS INPUT.

127PROGRAM STEPS
KONSTANTY BOUFAL
PL - WILCZA

60060D 67-MULTIPLY TWO NUMBERS UP TO TWENTY DIGITS

THIS PROGRAM CALCULATES THE PRODUCT OF TWO NUMBERS WITH UP TO TWENTY DIGITS EACH, WITH ALL FIGURES.

204PROGRAM STEPS
FRANZ SAGMUELLER
A - HOHENBERG

60061D 67-GEOMETRIC OPERATIONS

GIVEN A POINT IN CARTESIAN COORDINATES YOU CAN PERFORM DIFFERENT OPERATIONS:
1. ROTATION AROUND A POINT WITH A GIVEN ANGLE.
2. YOU CAN MIRROR A POINT AT A GIVEN LINE.
3. CIRCLE INVERSION (CIRCLE REFLECTION)
4. LENGTHENING THE POINT WITH A GIVEN FACTOR (THROUGH A GIVEN POINT).
5. DISPLACEMENT INTO A GIVEN DIRECTION. PROGRAM CAN STORE UP TO 7 OPERATIONS AT THE SAME TIME

219PROGRAM STEPS
STEFAN TRCEK
D - PFORZHEIM

60062D 67-REGULAR POLYHEDRONS

GIVEN A POLYHEDRON (I.E TETRAHEDRON HEXAHEDRON (CUBE), OCTAHEDRON, DODECAHEDRON, ICOSAHEDRON) AND ONE OF FOLLOWING PIECES: EDGE LENGTH, VOLUME, SURFACE, INRADIUS OR CIRCUMRADIUS, PROGRAM CALCULATES THE OTHER FOUR PIECES.

198PROGRAM STEPS
STEFAN TRCEK
D - PFORZHEIM

60063D 67-TRIANGLE COMPUTATIONS

GIVEN THE 3 SIDES OR THE 3 BISECTOR LINE SEGMENTS OF A TRIANGLE, PROGRAM CALCULATES SIDES, BISECTOR LINE SEGMENTS, ANGLES, ANGLE BISECTORS, HEIGHTS, RADIUS OF INCIRCLE, RADIUS OF CIRCUMCIRCLE, DIFFERENCE FROM THE CENTRE OF THE INCIRCLE TO THE CENTRE OF THE CIRCUMCIRCLE AND THE AREA.

224PROGRAM STEPS
STEFAN TRCEK
D - PFORZHEIM

60064D 67-RANDOM NUMBER GENERATOR

PROGRAM PRODUCES RANDOM NUMBERS. GIVEN N ELEMENTS, EACH HAVING THE SAME DISTANCE TO THE NEXT, PROGRAM ELECTS RANDOMLY M ELEMENTS. EXAMPLES FOR THE ELEMENTS:
1,2,3,4,5,6, (TO THROW AT DICE);
-7,-2,3,8;1,3,5.

184PROGRAM STEPS
STEFAN TRCEK
D - PFORZHEIM

60065D 67-POLYNOMIAL FUNCTIONS: VALUE DIFFERENTIAL QUOTIENTS, INTEGR.

PUT IN A POLYNOMIAL OF UP TO 20TH DEGREE AND THE PROGRAM COMPUTES THE VALUE AND ALL DIFFERENTIAL QUOTIENTS. IT EVALUATES THE AREA IN A GIVEN INTERVALL. YOU CAN SIGN UP YOUR POLYNOMIAL ON A DATA-CARD. IF YOU WISH YOUR CALCULATOR PUTS OUT THE COEFFICIENTS OF ANY DERIVATIVE OR INTEGRATES THE POLYNOMIAL (YOU CAN PUT IN AN INTEGRATION CONSTANT) BY PUTTING IN THE COEFFICIENTS OF THE POLYNOMIAL, ZERO'S NEED NOT BE PUT IN.

224PROGRAM STEPS
STEFAN TRCEK
D - PFORZHEIM

60066D 67-F-DISTRIBUTION

PROGRAM CALCULATES PERCENTILE OR TAIL END VALUES ON A F-DISTRIBUTION CURVE. INPUT ARE:
OR: VARIANCE 1 AND 2 AND DEGREES OF FREEDOM 1 AND 2
OR: F-VALUE, DEGREES OF FREEDOM IN NUMERATOR AND DENOMINATOR THE TWO RESTRICTIONS IN PROGRAM 00112D ARE ELIMINATED. (I.E. THE F-VALUE MAY BE LESS THAN ZERO AND THE TWO DEGREES OF FREEDOM MAY BOTH BE ODD)

160PROGRAM STEPS
JOHAN DECAT
B - GENT

60067D 67-ASA-DIN CONVERSIONS

PROGRAM INTERCHANGEABLY CONVERTS BETWEEN ASA AND DIN, THE TWO COMMONLY MOST USED INDICATIONS FOR FILM SPEED.

027PROGRAM STEPS
JOHAN DECAT
B - GENT

60068D 67-GELFILTRATION G-100

SAME IN- AND OUTPUT AS 'GELFILTRAION G-25' BUT ESPECIALLY DESIGNED FOR SEPHADEX G-100. (ALL NECC. CONSTANTS FOR G-100 INCLUDED IN PROGRAM).

054PROGRAM STEPS
JOHAN DECAT
B - GENT

60069D 67-TORSIONAL VIBRATIONS -HOLZER METHOD

PROGRAM CALCULATES THE TORQUE WHICH SHOULD ACT ON THE LAST DISC TO VIBRATE WITH GIVEN FREQUENCY. IF

60069D (CONTD)

THIS TORQUE IS EQUAL TO ZERO AT THE GIVEN FREQUENCY (P=W>0) THEN THIS FREQUENCY IS CRITICAL (IN GENERAL). PROGRAM ACCEPTS 9 DIFFERENT DISCS, THE FIRST OF THEM CAN BE APPLIED N-TIMES. N IS UNLIMITED. THE LINE OF ELASTICITY OF SYSTEM CAN BE PLOTTED, TOO.

123PROGRAM STEPS
FRANC TOMSIC
YU - LJUBLJANA

60070D 97-EXTENDED 3X3 MATRIX OPERATIONS

THIS PROGRAM PERFORMS ALL FUNCTIONS LIKE PROGRAM SD-10A; IN ADDITION IT OFFERS THE FOLLOWING FEATURES:
1. IT IS POSSIBLE TO COMPUTE THE "ASSOCIATED" MATRIX: EACH TERM OF THE INVERSE MATRIX IS MULTIPLIED BY THE DETERMINANT.
2. YOU CAN TRANSPOSE THE MATRIX.
3. THIS PROGRAM WORKS ABOUT TWICE FASTER THAN SD-10A.

224PROGRAM STEPS
PASCAL FAIVRE
CH - DELEMONT

60071D 97-FAST FACTORIAL FOR GREAT NUMBERS

THIS ESPECIALLY FAST PROGRAM COMPUTES N! FOR N<10**7; FOR INSTANCE, COMPUTING TIME FOR 1000! IS LESS THAN 4 MINUTES. NO APPROXIMATION'S METHOD IS USED.

222PROGRAM STEPS
PASCAL FAIVRE
CH - DELEMONT

60072D 97-OSCULATORY CIRCLE OF A CURVE GIVEN BY Y=F(X)

THIS ONE-SIDE PROGRAM COMPUTES THE CURVATURE AND THE COORDINATES OF THE CENTER OF THE OSCULATORY CIRCLE FOR ANY PLANE CURVE GIVEN BY Y=F(X); IT ALSO COMPUTES F'(X) AND F''(X) WITH A GOOD PRECISION. 112 STEPS ARE AVAILABLE FOR THE F(X)'S SUBROUTINE.

112PROGRAM STEPS
PASCAL FAIVRE
CH - DELEMONT

60073D 97-OSCULATORY CIRCLE OF A PLANE CURVE (PARAMETRIC EQUATIONS)

WITH THIS PROGRAM YOU CAN COMPUTE THE CURVATURE AND THE COORDINATES OF THE CENTER OF THE OSCULATORY CIRCLE FOR ANY PLANE CURVE GIVEN BY ITS PARAMETRIC EQUATIONS X(T) AND Y(T); YOU CAN ALSO COMPUTE X'(T), X''(T) AND Y'(T),Y''(T) WITH A GOOD PRECISION. 83 STEPS ARE AVAILABLE FOR THE FUNCTIONS' SUBROUTINES.

141PROGRAM STEPS
PASCAL FAIVRE
CH - DELEMONT

60074D 67-CHEMICAL ELEMENTS I

YOUR HP IS A COMPUTER. YOU ENTER THE CODE OF LETTERS OF THE ELEMENT SYMBOLS AND YOUR HP OUTPUTS THE VALENCE, THE MOLAR MASS, THE ATOMIC MASS AND THE ATOMIC NUMBER. (CHEMICAL ELEMENTS 1 TO 99).

221PROGRAM STEPS
REIBEL JEAN
F - FONTENAY AUX ROSES

60075D 67-GRAND MASTER MIND

AS FOR THE SMALL MASTER MIND, THE PLAYER MUST FIND A SECRET CODE CONTAINED IN THE MACHINE, WHICH ANSWERS THE DIFFERENT TRYINGS BY INFORMATIONS (SEE PAGE 2). HERE, THERE ARE NOT 4 SPACES BUT 4 PAIRS (SO 8 SPACES). THEREOVER, YOU

PROGRAM ABSTRACTS

60075D (CONTD)

CAN SELECT TO USE THE NUMBERS FROM 1 TO 5 OR MORE. IT IS THE ACTUAL MOST DIFFICULT VERSION OF THE MASTER MIND SERIE.

221PROGRAM STEPS
JACQUES MAREE
B - NAMUR

60076D 67-RESISTIVE ATTENUATOR AND MATCHMAKER DESIGN

THE PROGRAM COMPUTES THE VALUES OF RESISTANCES YIELDING A SYMETRICAL ATTENUATOR FOLLOWING THE FOUR NEXT SCHEMES. A) T NETWORK, PI NETWORK, T BRIDGED NETWORK, LATTICE NETWORK. THE PROGRAM COMPUTES THE VALUES OF RESISTANCES A MATCHMAKER FOLLOWING THE TWO NEXT SCHEMES. T NETWORK, PI NETWORK. THE PROGRAM COMPUTES THE MINIMAL LOSS IN BOTH ENDS.

166PROGRAM STEPS
PIERQUIN MICHEL
F - THIAIS

60077D 67-PAIRED (2X2) 4-VARIABLE INTERCHANGEABLE SOL. CONTR. LOGIC

SKELETON PROGRAM WITH THE NECESSARY CONTROL LOGIC FOR PAIRED 4-VARIABLE INTERCHANGEABLE-SOLUTION PROGRAMS OF THE KIND A=F(B,C),F(B,D)=F(C,D)= B=F(A,C)=F(A,D)=F(C,D) AND SO ON, OBTAINING IN EACH CASE EITHER OR BOTH THE MISSING PARAM. WHEN 2 OUT OF THE 4 VARIABLES ARE INPUT. USER ONLY HAS TO INSERT ACTUAL KEY-STROKES TO COMPLETE THE PROGRAM. CONDITIONAL TESTS SELECT CALCULA-TIONS ACCORDING TO WHICH PARAMETERS WERE INPUT. 2 PROGRAM VERSIONS FOR FUNCTIONS INSERTED AS LABELS OR AS MERGED ADDITIONAL ROUTINES.

112PROGRAM STEPS
L ANDREW MANNHEIM
UK - RICHMOND

60078D 67-BINARY-CODED DECIMAL (BCD) CONVERSIONS

IN BINARY-CODED DECIMAL (BCD) NOTATION, MUCH USED IN DATA PROCESSING, EACH DECIMAL DIGIT OF A NUMBER IS CONVERTED SEPARATELY TO A 4-DIGIT BINARY EQUIVALENT; THE WHOLE DECIMAL NUMBER THUS BECOMES A STRING OF 4-DIGIT BINARIES. FOR ANY DECIMAL NO. OF UP TO 10 DIGITS THIS PROGRAM QUICKLY LISTS THE CORRECT STRING OF 4-DIGIT BCDS. CONVERSELY, IT BUILDS UP A SEQUENCE OF UP TO 10 BCDS INTO A NORMAL DECIMAL-BASE NUMBER.

173PROGRAM STEPS
L ANDREW MANNHEIM
UK - RICHMOND

60079D 67-SPHERICAL TRIANGLES WITH AREA

THIS PROGRAM EXTENDS THE SCOPE OF MAI 12A (00078D) BY CALCULATING THE AREA (GIVEN THE RADIUS) OF ANY SHPERICAL TRIANGLE FOR WHICH IT HAS COMPUTED SOLUTIONS OF THE SIDES AND ANGLES. ALTERNATIVE ROUTINE COVERS CASES WHERE ORIGINAL INPUT WAS IN DEGREES OR IN RADIANS. OUTPUT SEQUENCE MAY ALSO BE REPEATED WITHOUT REENTERING INPUTS.

215PROGRAM STEPS
L ANDREW MANNHEIM
UK - RICHMOND

60080D 67-CAMERA LENS FOCUSING SCALE DATA

IF TWO OF FOUR CAMERA LENS FOCUSING PARAMETERS ARE KNOWN - OBJECT DISTANCE U, FOCAL LENGTH F, IMAGE MAGNIFICATION M,LENS EXTENSION E IN FRONT OF INFINITY POSITION - THE PROGRAM CALCULATES EITHER OR BOTH OF THE OTHER TWO. FOR A SCREW OR HELICAL FOCUSING MOVEMENT OF KNWON

60080D (CONTD)

PITCH AND BARREL DIA. THE PROGRAM ALSO CALCULATES BARREL ROTATION AND DISTANCE MARK LOCATIONS ALONG DISTANCE SCALE. INPUTS AND OUTPUTS IN MM; U IN METERS OR FEET.

224PROGRAM STEPS
L ANDREW MANNHEIM
UK - RICHMOND

60081D 67-PHOTO FUNCTIONS-3:RECIPROCITY FAILURE (SCHWARZSCHILD)

AT LOW LIGHTING LEVELS PHOTOGRAPHIC FILMS LOSE SPEED, HENCE CONDITIONS REQUIRING LONG EXPOSURE TIMES NEED AN EXTRA EXPOSURE INCREASE DEPENDING ON THE FILM. THE PROGRAM CALCULATES THE CORRECT EXPOSURE TIME FOR ANY THEORETICAL TIME FOR 9 FILM GROUPS AND ALSO GIVES F-STOP CORRECTION IN LIEU OF TIME INCREASE. FILM DATA ARE ENCODED IN REGISTERS AND INPUT VIA DATA CARD(S). INSTRUCTIONS PROVIDED FOR DERIVING AND ENCODING FILM DATA.

090PROGRAM STEPS
L ANDREW MANNHEIM
UK - RICHMOND

60082D 67-PHOTO FUNCTIONS 4: SHUTTER SPEEDS FOR MOVEMENT

FOR PHOTOGRAPHING MOVING OBJECTS, THE EXPOSURE TIME MUST BE SHORT ENOUGH (SHUTTER SPEED FAST ENOUGH) TO RECORD SUCH MOVEMENT ON THE FILM WITHOUT NOTICEABLE BLURRING. THIS PROGRAM COMPUTES THE REQUIRED SHUTTER SPEED FOR DIFFERENT OBJECT SPEEDS, DISTANCES, LENSES AND VARIOUS SUBJECT AND SHARPNESS FACTORS. OUTPUT IS IN FORM OF ACTUAL SHUTTER SETTINGS USUALLY MARKED ON CAMERAS.

159PROGRAM STEPS
L ANDREW MANNHEIM
UK - RICHMOND

60083D 67-VARIABLE WORKING HOURS

COMPUTES THE DAILY WORKED HOURS, CUMULATED WORKED HOURS AND EXESS OR DEFICIT. THE STATUS IS RECORDED ON A CARD WHICH IS REUTILIZED THE NEXT DAY.

130PROGRAM STEPS
MENZI ROBERT FREDERIC
CH - GENEVA

60084D 67-BASIC 67

THIS PROGRAM ALLOWS YOU TO PROGRAM YOUR HP 67/97 IN BASIC.THERE ARE 14 DIFFERENT COMMANDS AVAILABLE, 5 VARIABLES AND ALL MATHEMATIC, TRIGONEMETRIC,STATISTIC, LOGARITHMIC AND EXPONENTIAL FUNCTIONS. THERE ARE ONLY 9 LINES (87 STEPS), BUT YOU MAY USE MULTIPLE ARITHMETIC STATEMENTS ON EACH LINE.

137PROGRAM STEPS
EGON JENSEN
DK - SONDERBORG

60085D 67-FACTORIZING WITH FERMAT'S METHOD

GIVEN AN INTEGER P (P<=EEX10) THIS PROGRAM DECOMPOSES IT IN 2 FACTORS. TIME EXECUTION IS SHORT IF THE 2 FACTORS ARE OF SAME ORDER OF MAGNITUDE.

058PROGRAM STEPS
ATTILIO FARINA
I - TURIN

60086D 67-DECIMAL-EXADECIMAL CONVERSION OF INTEGERS UP TO EEX10.

THIS PROGRAM CAN CONVERT A DECIMAL INTEGER (NOT EXCEEDING EEX10) IN

60086D (CONTD)

EXADECIMAL BASIS; AND VICEVERSA.

111PROGRAM STEPS
ATTILIO FARINA
I - TURIN

60087D 67-97 CALCUL. OF POINTS DETERM. IN A NET OF ALIGN. BASES SU1-2AD

AUTO DATA MESSLINIENBERECHNUNG VR 22.00A. ALL OLD- AND NEWPOINTS ARE OR WILL BE STORED AT DATA CARDS.YOU HAVE TO LOAD ONLY THE START VALUES. IT CALCULATES THE DISTANCE ERROR BETWEEN STARTING/ENDPOINT WITH MAX. ERROR, THE BASEPOINT, THE LATERAL POINT, WITH OR WITHOUT PRINT MODE AND WITH SELECTION OF TWO DIFFERENT DISPOSITIONS. IT IS POSSIBLE TO LOAD POINTS ON DATA CARDS. FEHLER-GRENZEN GEM. FA II (RD.ERL.D.HESS. MIN.F. WIRTSCHAFT UND TECHNIK V.31.3.1970 (-IVC2-K4300A-114-)).

224PROGRAM STEPS
JOHANNES GRUSS
D - WIESBADEN

60088D 67-97 4 POINT LINE INTERSECTION SU7-1AD

AUTO DATA. 4-PUNKT-GERADENSCHNITT VR 9.00A. ALL OLD- AND NEWPOINTS ARE OR WILL BE STORED AT DATA CARDS YOU HAVE TO LOAD ONLY THE START VAULUES. IT CALCULATES THE INTER-SECTION POINT OF THE TWO LINES. WITH OR WITHOUT PRINT MODE AND WITH SELECTION OF TWO DIFFERENT DISPOSITIONS. IT IS POSSIBLE TO LOAD POINTS ON DATA CARDS.

224PROGRAM STEPS
JOHANNES GRUSS
D - WIESBADEN

**60089D 67-LINK PROGRAM FOR GAUSSIAN QUADRATURE ** MTH7 **

PROGRAM CALCULATES FINITE AND INFINITE INTEGRALS. IT IS POSSIBLE TO SELECT AN ERROR LIMIT. PROGRAM RUNS WITH INTERVALL HALVING. ITERATION WILL INTERRUPT WHEN DIFFERENCE OF THE TWO LAST APPROXIMATIONS WILL BE SMALLER THAN THE ERROR LIMIT. ONLY IN CONNECTION WITH "00072D". THE INTEGRATION CONSTANTS ARE STORED ON DATA CARD. FOR F(X) IT IS POSSIBLE TO USE 062 STEPS.

062PROGRAM STEPS
JOHANNES GRUSS
D - WIESBADEN

60090D 67-97 LINE ELEMENTS SU27AD

AUTO DAT. LINIENELEMENTE VR 24.40A. ALL OLD- AND NEWPOINTS ARE OR WILL BE STORED AT DATA CARDS. YOU HAVE TO LOAD ONLY THE START VALUES. GIVEN ARE TWO POINTS AB AND A LATERAL POINT C. PROGRAM CALCULATES DISTANCE AB; COORDINATES OF THE BASEPOINT F ON LINE AB, DISTANCE AF +-FC. WITH OR WITHOUT PRINT MODE AND WITH SELECTION OF TWO DIFFERENT DISPOSITIONS. IT IS IMPOSSIBLE TO LOAD POINTS ON DATA CARDS.

224PROGRAM STEPS
JOHANNES GRUSS
D - WIESBADEN

60091D 67-97 POLAR POINTS SU3-1AD

AUTO DATA. POLARE PUNKTE VR19.70A. ALL OLD- AND NEWPOINTS ARE OR WILL BE STORED AT DATA CARDS. YOU HAVE TO LOAD ONLY THE START VALUES.GIVEN ARE THE STANDPT. AND A TARGETPOINT FOR DIRECTION. MEASURED ARE THE ANGLES FROM THIS TARGETPT. TO A NEW POINT AND THE DISTANCE. IT IS ALSO POSSILBE TO KNOW THE STANDPT. AND A GRID BEARING. PROGRAM CALCULATES THE RECTANGULAR COORDINATES OF THE

60091D (CONTD)

NEWPT. WITH OR WITHOUT PRINT MODE AND WITH SELECTION OF 2 DIFFERENT DISPOSITIONS. IT IS POSSIBLE TO STORE POINTS ON DATA CARD.

190PROGRAM STEPS
JOHANNES GRUSS
D - WIESBADEN

60092D 67-TRANSFORMATION OF GEOGRAF. IN GAUSS-KRUEGER COORD. NSU5

YOU HAVE TO KNOW THE RIGHT AND HIGH VALUE. PROGRAM CALCULATES THE GEOGRAFIC LONGITUDE, LATITUDE, THE PLAIN AND ELLIPTIC MERIDIAN CONVERGENCY.

336PROGRAM STEPS
JOHANNES GRUSS
D - WIESBADEN

60093D 67-TRANSFORMATION OF GAUSS-KRUEGER IN GEOGRAF. COORD. NSU4

YOU HAVE TO KNOW THE GEOGRAFIC LATITUDE AND LONGITUDE. FOR A SELECTED MID LONGITUDE PROGRAM CALCULATES THE RIGHT AND HIGH VALUE THE PLAIN AND ELLIPTIC MERIDIAN CONVERGENCY.

224PROGRAM STEPS
JOHANNES GRUSS
D - WIESBADEN

60094D 67-TRUSS I NORMALLY LOADED

THIS PROGRAM CALCULATES FORCES IN MEMBERS OF PLANE, ISOSTATIC, SYMMETRICAL TRUSS, LOADED NORMALLY IN UPPER JOINTS ON HALF SPAN. RESULTS ARE SHOWN AS FOLLOWS: REACTIONS VA, HA, VB AND THEN NUMBER OF TRUSS MEMBER AND VALUE OF FORCE IN THIS MEMBER. NUMBER OF TRUSS MEMBERS IS NOT LIMITED. NEGATIVE VALUE MEANS COMPRESSION.

224PROGRAM STEPS
KAZIMIERZ CADER
PL - BIELSKO-BIALA

60095D 67-TRUSS I VERTICALLY LOADED

THIS PROGRAM CALCULATES FORCES IN MEMBERS OF PLANE ISOSTATIC SYMMETRICAL TRUSS,LOADED VERTICALLY IN UPPER JOINTS ON WHOLE OR HALF SPAN. RESULTS ARE SHOWN AS FOLLOWS: REACTIONS AND THEN NUMBER OF TRUSS MEMBER AND VALUE OF FORCE IN THIS MEMBER. NUMBER OF TRUSS MEMBERS IS NOT LIMITED. NEGATIVE VALUE MEANS COMPRESSION.

205PROGRAM STEPS
KAZIMIERZ CADER
PL - BIELSKO-BIALA

60096D 67-EFFECTVE COLUMN LENGTHS SPAN MULTI STORY FRAMES

CALCULATION OF BUCKLING FACTORS AND EFFECTIVE COLUMN LENGTHS FOR SINGLE SPAN MULTI-STORY FRAMES FOR ALL TYPES OF COLUMN FOOTINGS (FIXED, PINNED PARTIAL RESTRAINT).
FOR CONCRETE FRAMES, ACC. DIN 4224 INCORPORATION OF REDUCED BEAM STIFFNESS DUE TO CRACKS.
REDUCTION OF BUCKLING LENGTHS DUE TO NON SYMMETRICAL COLUMN LOADS CAN BE INCORPORATED,TOO. (ACC.DIN 4114)

198PROGRAM STEPS
FRITZ OTTO GOEDICKE
D - KAARST

60097D 67-ELASTIC RESTRAINT COLUMN

CALCULATION ELASTIC RESTRAINT FOR FOLLOWING CASES:
FIXED COLUMN FOOTING STRUCTURAL STEEL;
PINNED COLUMN FOOTING STRUCTURAL STEEL;

60097D (CONTD)

FOUNDATION CONCRETE FRAME

174PROGRAM STEPS
FRITZ OTTO GOEDICKE
D - KAARST

60098D 67-TRUSSED RAFTER (KEHLBALKENDACH) -PART 1

WITH 3 HINGES; REACTIONS, MOMENTS AND FORCES DUE TO VERTICAL LOADS.
5 LOAD CONDITIONS.

224PROGRAM STEPS
FRITZ OTTO GOEDICKE
D - KAARST

60099D 67-TRUSSED RAFTER (KEHLBALKENDACH) -PART II

WITH 3 HINGES;REACTIONS,MOMENTS AND FORCES DUE TO LOADS, PERPENDICULAR TO THE RAFTERS (WINDLOADS).
2 LOAD CONDITIONS.

218PROGRAM STEPS
FRITZ OTTO GOEDICKE
D - KAARST

60100D 67-TRUSSED RAFTER (KEHLBALKEN-DACH) -PART III

WITH 3 HINGES; REACTIONS,MOMENTS AND FORCES DUE TO THERMAL EXPANSION
4 LOAD CONDITIONS.

107PROGRAM STEPS
FRITZ OTTO GOEDICKE
D - KAARST

60101D 97-WEIGHED AVERAGE WITH LIMITS OF CONFIDENCE

THIS PROGRAM COMPUTES THE WEIGHED AVERAGE WITH LIMITS OF CONFIDENCE OF A SET OF EXPERIMENTAL DATA WHICH HAVE BEEN MEASURED INDEPENDENTLY, EACH WITH AN EXPERIMENTAL UNCERTAINTY (LIMITS OF CONFIDENCE) WHICH IS EITHER GUESSED OR OTHERWISE DETERMINED.

066PROGRAM STEPS
GERHARD J MUELLER
D - ERLANGEN

60102D 67-TEST ON POLYGONALITY OF NUMBERS

THE PROGRAM, GIVEN AN INTEGER P AND A SECOND INTEGER N (WHERE N<=P) TESTS WHETHER P IS A POLYGONAL NUMBER OF SIDE N; OR, GIVEN ONLY P, FINDS THE MINIMUM NUMBER N FOR WHICH P IS A POLYGONAL NUMBER.

059PROGRAM STEPS
ATTILIO FARINA
I - TURIN

60103D 97-INTEGRAL SOLUTIONS OF: 1+X*X=D*Y*Y (D<397)

THE PROGRAM PRINTS ALL LEAST EXISTING SOLUTIONS OF EQUATION: 1+X*X=D*Y*Y* FOR D<397.
ALSO SHOWN HOW TO FIND CORRESPONDING SOLUTIONS OF ALLIED EQUATION:
X*X=1+D*Y*Y* (PELL EQUATION).

103PROGRAM STEPS
ATTILIO FARINA
I - TURIN

60104D 67-MAX AND MIN OF F(X)

PROGRAM CALCULATES MAXIMUM OR MINIMUM OF MATHEMATICAL FUNCTIONS - IF REQUIRED WITH HIGH ACCURACY - AND MAY ALSO BE USED FOR EQUATIONS WHICH CANNOT BE SOLVED EXPLICITLY BY MATHEMATICAL ANALYSIS.

089PROGRAM STEPS
CHRISTIAN W HIRSCH
N - BAERUM

60105D 67-GLARE IN STREET LIGHTING

THE PROGRAM COMPUTES THE DISABILITY GLARE TI AND THE DISCOMFORT GLARE G AS DESCRIBED BY INTERNATIONAL COMMISSION OF ILLUMINATION IN THE PUBLICATION CIE 31-1976.
THE PROGRAM ALLOWS EITHER TO INPUT THE AVAILABLE ACTUAL CONDLEPOWER II OR THE PROGRAM COMPUTES THE CANDLEPOWER II WITH A FINITE INTERPOLATION OUT OF I VALUES GIVEN FOR GAMMA=70/75/80/85

222PROGRAM STEPS
WERNER RIEMENSCHNEIDER
CH - WETTINGEN

60106D 97-PARTICLE SIZE DISTRIBUTION

GIVEN RESULTS FROM WET OR DRY SEVE ANALYSIS TESTS, THE PARTICLE SIZE DISTRIBUTION IS DETERMINED, IN ACCORDANCE WITH CURRENT BRITISH PRACTICE (BS 1377:1975).
PROGRAM DOCUMENTATION INCLUDES FLOW CHARTS, BOTH OF THE TEST PROCEDURE AND PROGRAM OPERATION.

030PROGRAM STEPS
ALLEN PARKER
UK - LOUGHBOROUGH

60107D 67-ECONOMIC OPTIMAL THICKNESS OF THERMAL INSULATION OF PIPES

PROGRAM CALCULATES THE ECONOMICAL OPTIMAL VALUE OF A ONE-LAYER THERMAL INSULATION OF HEATING PIPES FOR ANY DIAMETER IN FUNCTION OF ENERGY COSTS AND INSULATION PRICES.

075PROGRAM STEPS
WILLY DEGEEST
B - WEZEMBEEK-OPPEM

60108D 67-QUADRATIC FIELDS II:CLASS NUMBER (KUMMER'S FORMULA)

FOR ANY DISCRIMINANT D THE PROGRAM CALCULATES THE CLASS NUMBER OF Q(D**1/2) BY MEANS OF KUMMER'S FORMULA. AS FOR POSITIVE D THE FUNDAMENTAL UNIT IS NEEDED, IT IS RECOMMENDED TO USE THE PROGRAM TOGETHER WITH "QUADRATIC FIELD I".

224PROGRAM STEPS
FRANZ KIRCHHEIMER
D - FREIBURG

60109D 67-LEGENDRE-JACOBI-KRONECKER SYMBOL

FOR ANY PAIR OF INTEGERS <10**9 THE PROGRAM COMPUTES THE KRONECKER SYMBOL, WHICH IS THE CANONICAL OF GENERALIZATION OF THE LEGENDRE (QUADRATIC RESIDUE) SYMBOL. A TYPICAL APPLICATION IS THE DECOMPOSITION OF RATIONAL PRIMES IN QUADRATIC #FIELDS.

223PROGRAM STEPS
FRANZ KIRCHHEIMER
D - FREIBURG

60110D 67-QUADRATIC FIELDS I:DISCRIMINANT AND FUNDAMENTAL UNIT

FOR ANY INTEGER M, ABS(M)<10**9 THE PROGRAM COMPUTES THE DISCRIMINANT OF THE QUADRATIC FIELD Q(M**1/2) AND (IF M>0) ITS FUNDAMENTAL UNIT (THE GENERATOR OF THE TORSION FREE PART OF THE UNIT GROUP). THE LATTER IS DONE BY MEANS OF THE CONTINUED FRACTION ALGORITHM, WHICH PROVIDES EXTREMELY FAST CALCULATION AND 7-DIGIT APPROXIMATION FOR UNITS UP TO 10**50 (FOR SMALL UNITS (<10**10) THE EXACT INTEGER VALUE IS COMPUTED)

224PROGRAM STEPS
FRANZ KIRCHHEIMER
D - FREIBURG

60111D 67-LONGITUDINAL PROFILE

PROGRAM WILL COMPUTE ELEVATIONS ALONG A VERTICAL ALIGNEMENT AS WELL AS ALL ITS RELEVANT POINTS, NAMELY INTERSECTION POINTS, TAGENT, GRADIENTS, BISECTRIX AND ELEVATIONS ON THE REQUIRED SECTIONS.
THE PROGRAM WORKS FROM DATA OF TWO POINTS AT EACH LONGITUDINAL GRADE AND THE RADIUS OF THE VERTICAL CURVES, ASSUMING THAT STATIONS ARE IN INCREASING ORDER.

193PROGRAM STEPS
CARLOS FERNANDES
P - LISBON

60112D 67-CURVE DESIGN

THE PROGRAM CALCULATES THE COORDINATES OF ANY POINT ON A CIRCULAR CURVE GIVEN THE COORDINATES OF THE CENTER, THE COORDINATES, THE CHAINAGE AND THE HAND OF THE CURVE IN THE DIRECTION OF INCREASING CHAINAGE (LEFT OR RIGHT). THE PROGRAM WILL ALSO PROVIDE THE WHOLE CIRCLE BEARING OF THE TANGENT AT ANY POINT AND OF THE LINE FROM THE START POINT TO ANY POINT ON THE CURVE.

095PROGRAM STEPS
MARK CRACKNELL
UK - LONDON

60113D 67-TRANSITION CURVES

THE PROGRAM CALCULATES THE COORDINATES OF ANY POINT ON A TRANSITION CURVE. IT ALSO CALCULATES THE WHOLE CIRCLE BEARING OF THE TANGENT AT ANY POINT AS WELL AS THE WHOLE CIRCLE BEARING OF A LINE DRAWN THROUGH THE ORIGIN AND ANY POINT. THE PROGRAM CAN ACCOMODATE FORWARD AND REVERSE TRANSITION CURVES, WHETHER LEFT OR RIGHT HAND.

205PROGRAM STEPS
MARK CRACKNELL
UK - LONDON

60114D 67-AREAS AND CENTROIDS BY COORDINATES

THE PROGRAM CALCULATES THE AREA OF A SPACE SURROUNDED BY STRAIGHT LINES GIVEN THE COORDINATES OF THE CORNERS. IT WILL ALSO CALCULATE THE COORDINATES OF THE CENTROID. THE USER MAY PROCEED CLOCKWISE OR ANTI-CLOCKWISE ROUND THE AREA AND THE COORDINATES CAN HAVE POSITIVE OR NEGATIVE VALUES.

126PROGRAM STEPS
MARK CRACKNELL
UK - LONDON

60115D 67-IRON DETERMINATION IN SULPHURIC ACID PICKLING BATH

DETERMINATION OF IRON (G/L FE) IN SULPHURIC ACID (H2SO4) PICKLING BATH BY DENSITY (D) AND SULPHURIC ACID (H2SO4) CONCENTRATION IN G/L H2SO4 OR WEIGHT-% H2SO4. CONVERSION OF H2SO4 G/L TO % OR % TO G/L H2SO4.
INITIAL BATH AND TOP UP FROM A SULPHURIC ACID PICKLING BATH TO A DESIRED H2SO4 CONCENTRATION.

177PROGRAM STEPS
FRANZ SAGMUELLER
A - HOHENBERG

60116D 67-IRON DETERMINATION IN HYDROCHLORIC ACID PICKLING BATH

DETERMINATION OF IRON (G/L FE) IN HYDROCHLORIC ACID (HCL) PICKLING BATH BY DENSITY (D) AND HYDROCHLORIC ACID (HCL) CONCENTRATION IN G/L HCL OR WEIGHT-% HCL. CONVERSION OF HCL G/L TO % OR % HCL TO G/L.
INITIAL BATH AND TOP UP FROM A

60116D (CONTD)

HYDROCHLORIC ACID PICKLING BATH TO A DESIRED HCL CONCENTRATION.

177PROGRAM STEPS
FRANZ SAGMUELLER
A - HOHENBERG

60117D 97-GENERATING DISTRIBUTED LAGS

TIME SERIE IS TRANSFORMED TO SERIE OF DISTRIBUTED LAGGED VALUES FORMING EXOGENEOUS VARIABLE FOR REGRESSION. DECREASING GEOMETRICAL KOYCK-DISTRIBUTION OF LAG OVER UP TO 9 PERIODS WITH USER-DEFINED STARTING VALUE. OPTIONAL DATA INPUT BY MAGNETIC CARD(S).

112PROGRAM STEPS
PETER PESCHEL
D - ESSEN

60118D 67-SOLUTION OF CAUCHY'S PROBLEM FOR THE HIPERBOLIC EQUATION

THE PROGRAM FINDS BETWEEN O AND L THE SOLUTION U(X,T) FOR THE EQUATION U''XX-1/V2.U''TT=0 WITH THE INITIAL CONDITIONS U(X,0)=U0(X) AND U'(X,0)=U1(X) AND THE BOUNDARY CONDITONS U(0,T)=U(L,T)=0

122PROGRAM STEPS
EDUARDO SALETE DIAZ
E - MADRID

60119D 67-MINIMUM FLOW FOR PROTECTION OF CENTRIFUGAL PUMPS

THE PROGRAM ESTIMATES, FOR CENTRIFUGAL PUMPS, THE MINIMUM FLOW REQUIRED TO PREVENT OVERHEATING, AND THE SIZE OF A SQUARE-EDGED RESTRICTION ORIFICE TO BE PUT ON THE PUMP DISCHARGE, IN TERMS OF THE SPECIFIED METRIC OR ENGLISH UNITS ARE ACCEPTED.

123PROGRAM STEPS
GIUSEPPE LIGATO
I - CUSANO MILANINO

60120D 67-VISCOSITY OF WATER

PROGRAM COMPUTES FROM EMPIRICAL RELATIONSHIPS (CONTRIBUTED FROM N.B.S. NATIONAL BUREAU OF STANDARDS THE VISCOSITY OF WATER (IN CP) FROM 0 DEGREE C. TO 100 DEGREE C. (32/212 DEGREE F.) GIVEN THE TEMPERATURE IN DEGREE C. (DEGREE F.)

102PROGRAM STEPS
GIUSEPPE LIGATO
I - CUSANO MILANINO

60121D 67-THREE DIMENSIONAL DIOPHANTIC PROBLEM

GIVEN THREE POSITIVE INTEGERS A,B,C THIS PROGRAM FINDS EVERY SET OF POSITIVE INTEGERS X,Y,Z SATISFYING X/A+Y/B+Z/C=(XYZ)/(ABC).

176PROGRAM STEPS
RAYMOND BROECKX
B - WILRIJK

60122D 67-CONIC'S EQATION AFTER COORDINATE TRANSFORMATIONS

GIVEN A CONIC'S EQUATION IN AN ORTHONORMAL BASE, THIS PROGRAM FINDS THE CONIC'S NEW EQUATION AFTER A TRANSLATION OR ROTATION OF THE BASE.

130PROGRAM STEPS
RAYMOND BROECKX
B - WILRIJK

60123D 67-NEW OR FULL MOON DAY

GIVEN ANY MONTH AND ANY CIVIL YEAR BETWEEN 0 AND 2100, THIS PROGRAM

60123D (CONTD)

FINDS THE CORRESPONDING DATES FOR NEW MOON AND FULL MOON. DATES ARE CORRECT IN 2/3 OF THE CASES, AND ARE ONE DAY OFF OTHERWISE.

217PROGRAM STEPS
RAYMOND BROECKX
B - WILRIJK

60124D 67-MOHAMEDDAN CALENDAR

THIS PROGRAM CONVERTS DATES ANNO DEI TO MOHAMEDDAN (ISLAM) DATES AND BACK. IT WORKS FOR CIVIL YEARS FROM 622 TO 20000.

223PROGRAM STEPS
RAYMOND BROECKX
B - WILRIJK

60125D 67-SCHOOL-HOUSE PROBLEM

THREE VILLAGES, AT GIVEN DISTANCES FROM EACH OTHER, AND WITH GIVEN NUMBERS OF SCHOOL-CHILDREN, WANT TO BUILD A COMMON SCHOOL-HOUSE. WHERE SHOULD THEY PUT IT?

146PROGRAM STEPS
RAYMOND BROECKX
B - WILRIJK

60126D 67-REGULAR POLYGONS -PLATONIC POLYHEDRONS

THIS PROGRAM GIVES, KNOWN ONLY ONE DATUM, ALL DATA OF REGULAR POLYNOMS (CIRCUMSCRIBED AND INSCRIBED RADII, AREA) AND OF PLATONIC POLYHEDRONS (CIRCUMSCRIBED, INSCRIBED AND TANGENT INTERSECTION RADII OF POLYHEDRON SPHERE, SURFACE, VOLUME AND DIHEDRAL ANGLE)

223PROGRAM STEPS
FELIPE LANDA
E - CORDOBA

60127D 97-RAYTRACE L-R OR R-L OF PARAXIAL OR TRIGONOMETRICAL RAYS

RAYTRACING OF PARAXIAL OR TRIGONOMETRICAL RAYS MAY BE CARRIED OUT IN A LEFT-TO-RIGHT OR RIGHT-TO-LEFT DIRECTION

108PROGRAM STEPS
JAMES HOUGHTON
UK - TETBURY

60128D 67-TRAJECTORY PROBLEMS

THE PROGRAM COMPUTES DIFFERENT TRAJECTORY PROBLEMS. DISPLAIED ARE: INITIAL VELOCITY, ELEVATION, COORDINATES OF A CHOOSEN (OR CALCULATED) POINT P, TIME TO REACH THIS POINT, MAXIMUM RANGE AND RISE,TIMES FOR MAXIMUM RANGE AND RISE, VERTCAL AND HORIZONTAL COMPONENTS OF VELOCITY IN P AND VELOCITY IN P.

370PROGRAM STEPS
ALEXANDER WEIGELT
CH - ST GALLEN

60129D 97-PARAXIAL CHROMATIC ABERRATION AS PATH DIFFERENCE

USING CONRADY'S EQUATIONS THE PROGRAM MAY BE USED TO CHOOSE THE DISPERSIONS OF THE GLASSES USED IN AN OPTICAL SYSTEM TO GIVE A PRESCRIBED PARAXIAL CHROMATIC ABBERRATION WHEN THAT ABERRATION IS EXPRESSED AS A PATH DIFFERENCE.

082PROGRAM STEPS
JAMES HOUGHTON
UK - TETBURY

60130D 67-LOGARITHM GENERATOR

PROGRAM WILL DERIVE LOG TO ANY BASE FOR UP TO 5 PLACES OF DECIMALS. LOG CALCULATION IS TO ONE MORE DECIMAL

60130D (CONTD)

PLACE THAN SPECIFIED WITH THE RESULT ROUNDED AND THE DISPLAY SET TO THE REQUIRED NO OF PLACES. ANTILOG FACILITY TAKES ANTILOG OF DISPLAYED NUMBER TO CURRENTLY SPECIFIED BASE.

150PROGRAM STEPS
WILLIAM F A STEELE
UK - FROME

60131D 67-LINEAR MOTION

PROGRAM BASED ON THE WELL KNOWN EQUATIONS V**2-U**2=2FS, V=U+FT AND S=UT+1/2FT**2 USER INPUTS U,V,S,T AND F IN ANY ORDER. WHEN ENOUGH VARIABLES HAVE BEEN INPUT TO ALLOW COMPUTATION OF THE REMAINDER (USUALLY 3) THE PROGRAM ASSUMES CONTROL AND DISPLAYS THE RESULTS IN THE ORDER U.V.S.T.F.

224PROGRAM STEPS
WILLIAM F A STEELE
UK - FROME SOMERSET

60132D 67-AUTOMATIC DESIGN OF STEEL COLUMNS

GIVEN VERTICAL FORCE,BENDING MOMENT BUCKLING LENGTH IN X-AND Y DIRECT. AND PERMISSIBLE STRESS,PROG. FINDS IN A TABLE OF STAND. SECTS. (IPB, IPE,I/U) STORED ON MAG. CARD WITH UP TO 19 PROFILES THE STAND. SECT., WHICH FITS THE CONDS. SLENDERNESS RATIOS SMALLER THAN 250 STRESSES IN X-AND Y-DIREC. WITH & WITHOUT BUCKLING COEFFICIENTS SMALLER THAN THE PERMISSIBLE STRESS ACCORING TO DIN 4114. IT GIVES OUT SUITABLE PROFILE WITH RADIUS OF INERTIA IN BOTH DIRECTIONS.,AREA,MOMENT OF RESISTANCE, THE DIFFERENT STRESSES & DEFLECTION

220PROGRAM STEPS
RALPH BEAUCAMP
D - MUENSTER

60133D 67-CRITICAL BUCKLING PRESSURE OF A CYLINDER

THE PROGRAM COMPUTES THE EXTERNAL PRESSURE AT WHICH ELASTIC BUCKLING OCCURS, FOR A THIN TUBE UNDER UNIFORM LATERAL EXTERNAL PRESSURE.

148PROGRAM STEPS
LESLIE A TIMPERLEY
UK - FAILSWORTH

60134D 67-PRESSURE VESSEL-INTERNAL PRESSURE TO A SME8 DIVI (CASE 2)

PROGRAM COMPUTES THICKNESS OF A PRESSURE VESSEL SHELL AND 2:1 TORISPHERICAL DISHED HEAD TO THE ASME VIII DIVISION I CODE. ALSO PROGRAM CHECKS THAT STATIC HEAD PLUS DESIGN PRESSURE DOES NOT OVER STRESS THE VESSEL.
THE STRESS IN THE SHELL AND HEAD ARE COMPUTED FOR TEST CONDITION. PRESSURE TO BE IN BARS AND STRESS TO BE IN NEWTONS PER MM SQUARED.

209PROGRAM STEPS
LESLIE A TIMPERLEY
UK - FAILSWORTH

60135D 67-PRESSURE VESSEL-INTERNAL PRESSURE TO ASME8 DV1 (CASE 1)

PROGRAM COMPUTES THICKNESS OF A PRESSURE VESSEL SHELL AND 2:1 TORISPHERICAL DISHED HEAD TO THE ASME VIII DIVISION I CODE. ALSO PROGRAM CHECKS THAT STATIC HEAD PLUS DESIGN PRESSURE DOES NOT OVER STRESS THE VESSEL. THE STRESS IN THE SHELL AND HEAD ARE COMPUTED FOR TEST CONDITION. PRESSURE AND STRESS TO BE IDENTICAL UNITS AND ONE OF THE FOLLOWING 1B PER IN. SQD., KG PER CM SQD. NEWTONS PER MM SQD.

223PROGRAM STEPS

60135D (CONTD)

LESLIE A TIMPERLEY
UK - FAILSWORTH

60136D 67-PRESSURE VESSEL WEIGHT CALCULATION

THE PROGRAM WILL COMPUTE THE WEIGHTS OF A STEEL PRESSURE VESSEL AT ERECTION, OPERATING WITH AND WITHOUT OPERATING LIQUID AND AT TEST. THE PROGRAM WILL COMPUTE FOR OTHER MATERIALS BY MODIFICATION OF DENSITY IN PROGRAM. THE USER IS CONTINUALLY PROMPTED FOR THE CORRECT DATA INPUT. THE PROGRAM WORKS IN METRIC UNITS, THOUGH COULD POSSIBLY BE CONVERTED.

467PROGRAM STEPS
LESLIE A TIMPERLEY
UK - FAILSWORTH

60137D 67-SERIES RL&C

(ANY COMBINATION OF SERIES R AND/OR L AND/OR C). GIVEN ANY 4 OF R,L,C,Z OR F, OTHER VALUE MAY BE CALCULATED 2 VALUES GIVEN FOR L,C OR F (I-INDUCTIVE REACTANCE GREATER THAN CAPACITIVE REACTANCE,II-INDUCTIVE REACTANCE LESS THAN CAPACITIVE REACTANCE) FOR GIVEN/CALCULATED Z. HALF POWER POINTS, Q - FACTOR & RESONANT FREQUENCY MAY NOW BE OBTAINED.INPUT OF CURRENT OR VOLTAGE GIVES:-INDUCTIVE,CAPACITIVE & NETT REACTANCES, VOLTAGE/CURRENT,VOLTAGES ACCROSS R, L & C, APPARENT - REACTIVE & TRUE POWERS, PHASE ANGLE.

205PROGRAM STEPS
LAWRENCE B HARTLEY
UK - BRIERFIELD

60138D 67-REDUCTION OF FIELD TACHEOMETRY SURVEY OBSERVATIONS

THE VERTICAL CIRCLE OF SOME THEODOLITES HAVE 0 DEGREES VERTICALLY UPWARDS AND SOME HAVE 0 DEGREES HORIZONTALLY. THE PROGRAM REDUCES FIELD OBSERVATIONS TO A FORM SUITABLE FOR INCLUSION IN A HEIGHT OF COLLIMATION LEVEL BOOK. FURTHER IT ALLOWS THE REDUCTION OF SUCH A LEVEL BOOK TO HEIGHTS ABOVE ORDINANCE DATUM.

086PROGRAM STEPS
MARK CRACKNELL
UK - LONDON

60139D 67-PIER DESIGN

THE PROGRAM CALCULATES THE MAXIMUM HORIZONTAL SEPARATION OF 2 REINFORCED BLOCKWORK PIERS GIVEN THE FOLLOWING PARAMETERS: WIND PRESSURE, MODULAR RATIO,DEPTH OF COMPRESSION STEEL, MAXIMUM PERMISSIBLE STRESS IN BENDING OF THE PIER, THE BREADTH DEPTH, HEIGHT OF THE PIER AND THE PROPOSED STEEL REINFORCEMENT. THE PROGRAM ALLOWS THE USER TO CHANGE ALL THE PHYSICAL PARAMETERS INDIVIDUALLY AND TO REVIEW, WITH TWO KEYSTROKES CERTAIN PHYSICAL PARAMETERS.

222PROGRAM STEPS
MARK CRACKNELL
UK - LONDON

60140D 67-PIER BASES

THE PROGRAM CALCULATES THE MAXIMUM GROUND BEARING PRESSURE UNDER THE BASE AND THE FACTOR OF SAFETY AGAINST OVERTURNING. THE PROGRAM ALSO ALLOWS THE USER TO FIND THE MAXIMUM MOMENT IN THE BASE AND THE 'R' FACTOR (=M/(B*D**2)). IT ALSO ALLOWS THE VARIOUS PHYSICAL PARAMETERS TO BE ALTERED INDIVIDUALLY.

220PROGRAM STEPS
MARK CRACKNELL
UK - LONDON

60141D 67-COORDINATES FOR TACHEOMETRY SURVEY

PROGRAM COMPUTES THE COORDINATES OF THE INSTRUMENT STATION GIVEN THE DISTANCES TO THE ENDS OF A KNOWN BASE LINE. IT WILL THEN COMPUTE THE COORDINATES OF OTHER POINTS GIVEN THE OBSERVED BEARING AND THE DISTANCE.

162PROGRAM STEPS
MARK CRACKNELL
UK - LONDON

60142D 67-AREAS AND CENTROIDS BY ANGLES AND DISTANCES

THE PROGRAM CALCULATES THE AREA OF A SPACE SURROUNDED BY STRAIGHT LINES GIVEN OBSERVED BEARINGS AND DISTANCES TO THE CORNERS FROM A POINT EITHER INSIDE OR OUTSIDE THE AREA OR ON ITS PERIMETER. THE USER MAY PROCEED CLOCKWISE OR ANTICLOCKWISE ROUND THE AREA.

164PROGRAM STEPS
MARK CARCKNELL
UK - LONDON

60143D 97-TWO SHORTING METHODS

THE PROGRAM SORTS:
A-A SET UP 24 NUMBERS,(POSITIVE OR NEGATIVE, BETWEEN THE RANGE OF THE CALCULATOR) FROM THE LOWEST TO THE HIGHEST.
B-A SET UP 48 NUMBER (N<100.000), ONLY POSITIVE, FROM THE LOWEST TO THE HIGHEST
THE PROGRAM SPENDS 8 TO 10 MINUTES TO SORT 48 NUMBERS.

178PROGRAM STEPS
JOSE M LOPEZ/SAIZ
E - MADRID

60144D 97-SETTLEMENT OR ADMISIBLE PRESSURE OVER SAND

THE PROGRAM COMPUTES STATIC SETTLEMENT OF FOUNDATIONS OVER SAND USING THE VALUES OF THE BEARING CAPACITY OF THE DUTCH FRICTION-CONE OR CALCULATES, USING THE SAME VALUES, THE ADMISIBLE PRESSURE OF A SHALLOW FOUNDATION OVER SAND FOR A LIMITED SETTLEMENT.

156PROGRAM STEPS
JOSE M LOPEZ-SAIZ
E - MADRID

60145D 67-QUATERNION ALGEBRA

PROGRAM ADDS, SUSTRACTS, MULITPLIES TWO QUATERNIONS; IT DIVIDES ONE QUATERNION BY ANOTHER ON THE LEFT AND ON THE RIGHT; IT CONJUGATES ONE QUATERNION BY ANOTHER; IT RAISES A QUATERNION TO THE NTH POWER; IT ALLOWS CHAIN OPERATIONS, VIA A SPECAIL "SET UP" ROUTINE.

224PROGRAM STEPS
ALEXANDER GRUZA
UK - LONDON

60146D 67-REGISTER DOUBLING

THIS PROGRAM UTILIZES THE DIGIT CAPACITY OF THE STORAGE-REGISTERS OF THE HP-67 TO KEEP TWO INDEPENDENT NUMBERS IN ONE REGISTER THE NUMBERS WILL BE STORED (AND RECALLED) WITH THREE SIGNIFICANT DIGITS AND CAN BE IN THE FULL RANGE OF THE CALCULATOR. ADDRESSING THE "NEW" REGISTERS IS DONE BY USING THE COMMON REGISTER-NUMBERS FOLLOWED BY 0 OR 1.

192PROGRAM STEPS
BC JENSEN
DK - KLAMPENBORG

60147D 67-MASTER-MIND

60147D (CONTD)

THIS PROGRAM TESTS A PREVIOUSLY GENERATED NUMBER (LINE OF CODE PEGS) WITH YOUR SUPPOSED NUMBERS AND GIVES AS INFORMATION THE NUMBER OF 'BLACK' AND 'WHITE' KEY PEGS. YOU CAN CHOSE UP TO 9 COLOURS AND LINES WITH UP TO 8 CODE PEGS.

126PROGRAM STEPS
PETER LAEDRACH
CH - WORB

60148D 67-CODER - DECODER

CALCULATOR OPERATES AS A CYPHERING MACHINE ORIENTED TOWARDS THE NON-TECHNICAL USER. SIMILAR TO "GEHEIMSCHREIBER", USED BY GERMAN HIGH COMMAND IN WORLD WAR 2 BUT FAR MORE COMPLEX. ROUTINES ALLOW CONVENIENT PROCESSING OF NUMBER PAIRS IN RANGE 00-99, INCLUDING SAFE HANDLING OF UP TO FIVE 'KEYS' AND EXTENSIVE USE OF MAG CARDS. BASIS OF SCRAMBLERS IS PSEUDORANDOM SEQ.GEN. IN HP HANDBOOK: TOTAL PERMUTATIONS EXCEED 3 EXP 28. NB: TO BE APPLIED WITH CAUTION.

223PROGRAM STEPS
ANDREW MICHAEL STEPHENSON
UK - HIGH WYCOMBE

60149D 67-5X5 AND 4X4 MATRIX OPERATIONS

THIS ONE-CARD PROGRAM CAN FIND THE DETERMINANT OF 5X5 OR 4X4 MATRIX; CAN INVERT 4X4 MATRIX AND CAN SOLVE 4 LINEAR EQUATIONS IN 4 UNKNOWNS. MATRIX ELEMENTS ARE ENTERED ONLY ONCE AND ARE SAVED BY THE PROGRAM.

210PROGRAM STEPS
ATTILIO FARINA
I - TORINO

60150D 67-MAX DEGREE 24 POLYNOMIUM -REAL ROOTS AND EVALUATION

POLYNOMIUM IN X: P(X) IS CONSIDERED REC. NEWTON-RAPHSON ITERATION AND HORNER-SCHEME FOR CALCULATION OF P(X) AND P'(X) ARE USED. ALTHOUGH THE METHOD IS HIGHLY SOPHISTICATED, IT FITS SO WELL TO THE OPERATIONAL STACK OF THE CALCULATOR THAT THE PROGRAM IS RATHER SHORT. IT EVEN HOLDS ROUTINES FOR ENTERING COEFFS. AND FOR CALCULATING P(X) AND P'(X) FOR X GIVEN, BESIDES THE CAPABILITY OF FINDING REAL ROOTS. NO SPLIT-NUMBERS ARE USED, SO ALL COEFFS. HAVE FULL PRECISION.

061PROGRAM STEPS
SOREN VIDEBAEK NIELSEN
DK - STRUER

60151D 97-DIAGRAM OF MOLLIER (X,I)

PROGRAM CALCULATES ABSOLUTE HUMIDITY, DENSITY, ENTHALPY AND DEW POINT OF MOIST AIR ON INPUT OF TEMPERATURE, PRESSURE AND RELATIVE HUMIDITY OF THE MOIST AIR. ONCE CALCULATED THOSE THERMODYNAMIC PROPERTIES, PROGRAM PERMITS CALCULATION OF A NEW SET OF VALUES FOR THE PROPERTIES MENTIONED ACCORDING TO CHANGES OF TEMPERATURE OF THE MOIST AIR (HEATING OR/AND COOLING).

224PROGRAM STEPS
ROBERT F J VAN DAMME
B - TIENEN

60152D 67-LADDER-NETWORK CALCULATIONS

COMPUTES THE IMPEDANCE AND TRANSFER CHARACTERISTICS OF A LADDER-NETWORK OF ANY NUMBER OF IMPEDANCES. EACH IMPEDANCE CAN BE A COMPLEX COMBINATION OF UP TO 15 SERIAL AND/OR PARALLEL ELEMENTS (R,L,C). THE ELEMENTS ARE CODED AND STORED IN THE CALCULATOR (MAX 15) OR ON MAG.

60152D (CONTD)

CARDS. THEIR CODES DETERMINE THEIR NATURE AND FUNCTION CALCULATIONS CAN BE MADE FOR DIFFERENT FREQUENCIES AND LOAD IMPEDANCES WITHOUT REINTRODUCING THE ELEMENTS OR BY JUST READING DATA-CARDS.

224PROGRAM STEPS
L DE BERAUDER
F - ST MARTIN D'HERES

60153D 67-CHESS-END GAME 1

IN THIS PROGRAM HP-97 PLAYS CHESS WITH KING AND TWO BISHOPS AGAINST YOUR KING ONLY, AND WINS THE GAME.

223PROGRAM STEPS
RAYMOND BROECKX
B - WILRIJK

60154D 67-DETERMINANTS

THIS PROGRAM CALCULATES DETERMINANTS OF DEGREE 2,3...,8. THE ELEMENTS EACH HAVE TO BE ENTERED ONLY ONCE, AFTER WHICH YOU ONLY HAVE TO WAIT FOR THE RESULT, LESS THAN 30 MINUTES FOR DEGREE 8.

223PROGRAM STEPS
RAYMOND BROECKX
B - WILRIJK

60155D 67-LINEAR SYSTEMS

THIS PROGRAM IS AN EXAMPLE OF THE POSSIBILITIES OF YOUR HP-67. IT SOLVES ANY LINEAR SYSTEM OF K EQUATIONS AND K UNKNOWNS (K<8), IF THIS SYSTEM HAS ONE SOLUTION. COEFFICIENTS MUST BE ENTERED ONLY ONCE. FURTHERMORE, YOU CAN FIND OUT HOW GOOD YOUR SOLUTION ACTUALLY IS, USING A SUBROUTINE, THAT CALCULATES THE RIGHT MEMBERS OF THE EQUATIONS, WHEN THE SOLUTION IS ENTERED IN THE LEFT MEMBERS.

224PROGRAM STEPS
RAYMOND BROECKX
B - WILRIJK

60156D 67-ANNUITIES: 10 PROBLEMS

GIVEN ANY THREE OF THE FOLLOWING FIVE VALUES, THIS PROGRAM CALCULATES THE OTHER TWO (TEN PROBLEMS): PRESENT VALUE, FUTURE VALUE, PERIODICAL PAYMENT, NUMBER OF PERIODS, PERCENTAGE PER PERIOD.

999PROGRAM STEPS
RAYMOND BROECKX
B - WILRIJK

60157D 67-TIMES OF ZENITH, SUNRISE AND SUNSET, TWILIGHT LIMITS

GIVEN THE OBSERVER'S LONGITUDE, LATITUDE AND TIME ZONE, AND A DATE, THIS PROGRAM CALCULATES THE TIMES (HOURS, MINUTES, SECONDS) OF HIGHEST SUN, SUNRISE, BEGINNING OF TWILIGHT, SUNSET AND END OF TWILIGHT. NO DATA CARD REQUIRED.

219PROGRAM STEPS
RAYMOND BROECKX
B - WILRIJK

60158D 67-MASTERMIND-INVERSE

IN DIRECT MASTERMIND, YOUR HP PLAYS THE ROLE OF MONITOR. IN INVERSE MASTERMIND, YOU ARE THE MONITOR, AND YOUR HP FINDS THE FOUR-DIGIT NUMBER YOU HAVE CHOSEN.

224PROGRAM STEPS
RAYMOND BROECKX
B - WILRIJK

60159D 67-THE BEST CURVE FITTING

THIS PROGRAM COMPUTES THE

60159D (CONTD)

CORRELATION COEFFICIENTS OF THE 4 BASIC-CURVES, THEN TAKES THE BEST OF THEM AND COMPUTES THE COEFFICIENTS A AND B OF THE BEST FITTING CURVE, THE ESTIMATED VALUE OF Y ON X OR X ON Y AND THE STANDARD ERROR OF ESTIMATE OF Y ON X OR X ON Y AND THE T OF STUDENT WITH TWO DEGREES OF FREEDOM, ENTERING THE DATA-PAIRS ONLY ONCE, YOU CAN ALWAYS CHANGE ANY DATA-PAIR BY ANOTHER.

224PROGRAM STEPS
RAYMOND BROECKX - JAN VAN THIELEN
B - STABROEK

60160D 67-12 PERIOD MOVING AVERAGE AND DESEASONALISING FACTORS

CALCULATES MOVING AVERAGE FOR "MID-POINT" PERIOD BY INCLUDING HALF OF FIRST AND 13TH PERIODS IN MOVING TOTAL. AFTER INPUT OF ALL DATA POINTS, CALCULATES MULTIPLICATIVE DESEASONALISING FACTORS, WHICH ARE HELD IN SUCCESSIVELY ADDRESSED STORAGE REGISTERS, AND ARE THEREFORE READILY AVAILABLE FOR USE IN SUBSEQUENT FORCASTING PROGRAMS (E.G. "FORECASTING WITH ADAPTIVE RESPONSE RATE").

222PROGRAM STEPS
MARTIN R HUMPHRIES
UK - BROMSGROVE

60161D 67-FORECASTING WITH ADAPTIVE RESPONSE RATE

MODIFIED EXPONENTIAL SMOOTHING: SMOOTHING CONSTANT AUTOMATICALLY ADJUSTS ACCORDING TO STABILITY/INSTABILITY OF SYSTEM (TRIGG & LEACH). PROVISION FOR UP TO 15 PERIODS MULTIPLICATIVE SEASONALITY. PROCEDURES FOR BOTH SETTING UP SYSTEM AND ROUTINE FORECASTING. "12-PERIOD MOVING AVERAGE AND DESEASONALISING FACTORS".

186PROGRAM STEPS
MARTIN R HUMPHRIES
UK - BROMSGROVE

60162D 67-TREND CURVES FOR LONG-RANGE FORECASTING BY 3-POINTS METHOD

FITS SIMPLE MODIFIED EXPONENTIAL, GOMPERTZ AND LOGISTIC CURVES TO UP TO 19 DATA POINTS. (DATA ENTERED ONCE ONLY FOR ALL THREE CURVES). "THREE POINTS" METHOD GIVES ONLY APPROXIMATE FIT, BUT IS RELATIVELY FAST TO EXECUTE. PROGRAM ALSO ALLOWS "FIT" TO BE EXAMINED, CALCULATES ERROR SUM OF SQUARES, AND ALLOWS FORECASTS TO BE MADE. MANUAL OR CARD DATA ENTRY.

224PROGRAM STEPS
MARTIN R HUMPHRIES
UK - BROMSGROVE

60163D 67-COMPUTATION OF CORRELATION COEFFICIENTS

GIVING A SET OF DATA PAIRS, THIS PROGRAM COMPUTES THE CORRELATION COEFFICIENTS WITH A LAG FROM ZERO TO EIGHT PERIODS AND THE REGRESSION COEFFICIENTS ON THE FORM X(I) = A+B Y(I-K) FOR K=0 TO 8.

175PROGRAM STEPS
PHILIPPE BEAUGRAND
F - PARIS

60164D 67-MULTIPLE REGRESSION 2 3 OR 4 EXOG. NORMAL OR AUTOREGR.

FITS AN EQUATION OF THE FORM X=A+BZ(1)+CZ(2)+DZ(3)+EZ(4) BY LEAST SQUARES METHOD. (Z(3) AND/OR ONLY Z(4) MAY BE OMITTED; IF THE EQUATION IS AUTOREGRESSIVE THE ONLY NON-LAGGED VARIABLE HAS TO BE INTRODUCED AT EACH STEP:NON-LINEAR FORMS

60164D (CONTD)

ARE POSSIBLE IF ONE MAY TRANSFORM THEM IN LINEAR FORMS). IT USES THE PROGRAM 5.5 MATRIX OP WITH SYMETRIC COEF (50234).

336PROGRAM STEPS
PHILIPPE BEAUGRAND
F - PARIS

60165D 67-CURVE FITTING STATISTICS

COMPUTE THE STATISTIAL RESULTS OF THE PROGRAM "CURVE FITTING" (PAC SD-03A). THE REGRESSION COEF. BEING ALREADY COMPUTED, THIS PROGR. GIVES THE COEF. OF DETERMINATION. THE ESTIMATED RESIDUAL VARIANCE AND ITS CONFIDENCE INTERVAL. THE VARIANCE COVARIANCE MATRIX AND CONFIDENCE INTERVALS FOR EACH REGRESSION COEF. THE VALUE OF THE "F", VALUES OF THE "T" FOR EACH REGRES. COEF., THE ESTIMATION OF ENDOG VAR (AND THE RESIDUE), AND THE DURBIN-WATSON STATISTICS. PRINT/PAUSE OR R/S MODE MAY BE SELECTED.

212PROGRAM STEPS
PHILIPPE BEAUGRAND
F - PARIS

60166D 67-TIDE CALCULATION II TIME AND HEIGHT IN SECONDARY PORTS

COMPUTES TIME AND HEIGHT OF HIGH AND LOW WATER IN SECONDARY PORTS, WHEN TIMES AND HEIGHTS IN THE STANDARD PORT ARE GIVEN. INPUT DATA ARE THOSE GIVEN BY THE TIDE TABLES ENTERED IN THE SAME ORDER. A ROUTINE PERMITS TO WRITE A DATA CARD FOR ANY SECONDARY PORT. WATER HEIGHT AT ANY TIME, TIME FOR ANY WATER HEIGHT, AND MEAN WATER LEVEL CAN BE COMPUTED.

210PROGRAM STEPS
ROBERT F MENZI
CH - GENEVA

60167D 67-LOTTO-NUMBER

AFTER THE INPUT OF A SEED, THIS PROGRAM COMPUTES SIX DIFFERENT NUMBERS BETWEEN 0 AND 41 TO FILL IN YOUR LOTTO-FORM.

075PROGRAM STEPS
JAN VAN THIELEN
B - STABROEK

60168D 67-WALL STREET GAME

YOU START ON THE STOCK MARKET WITH 50 SHARES, 10 SHARES A OF $100, 10 SHARES B OF $200,10 SHARES C OF 300 10 SHARES D OF $400 AND 10 SHARES E OF $500 EACH, IN TOTAL A CAPITAL OF $15.000. BY WAY OF SPECULATION, YOU SHOULD TRY TO REALIZE A MAXIMUM PROFIT IN A PERIOD OF 30 DAYS, BY BUYING AND SELLING SHARES. THE SHARE-QUOTATIONS ARE DETERMINED EVERY DAY AND CAN BE RECALLED. A SPECIAL RANDOM NUMBER GENERATOR TO DETRMINE THESE QUOTES IS USED.

220PROGRAM STEPS
JAN VAN THIELEN
B - STABROEK

60169D 67-LINEAR PROGRAMMING

THIS PROGRAM CAN SOLVE LINEAR PROGRAMMING PROBLEMS OF THREE LINEAR INEQUALITIES AND TWO VARIABLES.

224PROGRAM STEPS
JAN VAN THIELEN
B - STABROEK

60170D 67-THE BEST CURVE FITTING

THIS PROGRAM COMPUTES WITH CARD A THE CORRELATION COEFFICIENT AND THE REGRESSION COEFFICIENTS A AND B

60170D (CONTD)

OF: Y=A*X+B, Y=A EXP B*X, Y=A*LN X+B AND Y = A*X**B, BY ENTERING (ONLY ONCE) N PAIRS OF XO AND YO, BE THE LEAST SQUARES METHOD.
WITH CARD B, PROGRAM COMPUTES THE BEST CURVE FIT AND THE REGRESSION COEFFICIENTS OF THEM, THE ESTIMATE OF X ON Y OR Y ON X AND THE STANDARD ERROR OF ESTIMATE. YOU CAN ALSO CHANGE ANY OF THE DATA-PAIRS BY ANOTHER.

416PROGRAM STEPS
JAN VAN THILEN
B - STABROEK

60171D 67-ROOTS OF AN N-DEGREE POLYNOMIAL (N MAX=8) REAL OR COMPLEX COEF.

THIS PROGRAM COMPUTES N-ROOTS OF A POLYNOMIAL OF DEGREE N(N-MAX=8) WITH REAL OR COMPLEX COEFFICIENTS. THE NEWTON FORMULA
XI+1=XI - FXI F'XI
TO MAKE BETTER AND BETTER APPROXIMATIONS OF THE ROOT IS USED. YOU CAN FOLLOW THE EVOLUTION OF THE ROOT AND THE APPROXIMATIONS OR COMPUTE DIRECTLY THE ROOT. THE APPROXIMATION IS BETTER THAN 10***-3. ANOTHER APPROXIMATION IS POSSIBLE IF YOU WANT IT.

205PROGRAM STEPS
JAN VAN THIELEN
B - STABROEK

60172D 97-POLYNOMIAL APPROXIMATION 8TH DEGREE INTERPOLATION

THIS PROGRAM ALLOWS 5 CARDS - BY MEANS OF THE LEAST SQUARES SUM METHOD ACCORDING TO CHEBYSHEV, IT REPLACES A CONTINUE FUNCTION F(X) OR THE DISCRET VALUES YI OF A CHARR BY A MTH DEGREE POLYNOMIAL P(X) WITH 2<=M<=8. THE VALUES XO,... XI...XN ENBALE TO DETERMINE THE CORRESPONDENT VALUES OF F(X) OR OF YI SHALL BE IN ARITHMETICAL PROGRESSION. AT THE END OF COMPUTATIONS, THE COEFFICIENTS AO...AN.. A8 OF POLYNOMIAL P(X) ARE STORED IN REGISTERS FROM RO TO R8.

871PROGRAM STEPS
ROBERT PIERRE RAYMOND
F - MEUDON

60173D 97-GAME OF LIFE (23 X 31)

IN THIS REALIZATION OF JOHN CONWAYS GAME THE POSITIONS OF COUNTERS ARE INTERPRETED AS BINARY NUMBERS. UNIQUE FEATURES: THE SIZE OF THE BOARD VARIES THROUGHOUT THE GAME. TO KEEP CALCULATION TIME SHORT IT HAS ALWAYS THE SMALLEST POSSIBLE VALUE.IF NECESSARY IT GROWS UP TO 25 X 33. FURTHER GROWTH LEADS TO ERROR DISPLAY. MOREOVER, AUTOMATIC SHIFTING OCCURS SO THAT MOVING ORGANISMS CAN NOT ESCAPE.ESPECIALLY SUITED FOR LONG UNCONTROLLED RUNS.

393PROGRAM STEPS
THOMAS BAUMANN
D - AUMEUHLE

60174D 97-EIGHT-FIELD-BEAM

THE PROGRAM COMPUTES THE SUPPORT AND FIELD MOMENTS,SUPPORT REACTIONS AND TRANSVERS FORCES AT THE SUPPORTS FOR UNIFORMLY DISTRIBUTED LOAD. LOAD, SPAN LENGTH AND MOMENT OF INERTIA CAN BE DIFFERENT FROM SPAN TO SPAN.

375PROGRAM STEPS
SVEN-AKE BLOMGREN
S - GOTEBORG

60175D 97-CURVE FITTING BY POLYNOMIAL OF 2ND OR 3RD DEGREE

THIS PROGRAM FITS FOR A SET OF RANDOMLY SPACED DATA POINTS, A

60175D (CONTD)

POLYNOMIAL OF THE 2ND OR 3RD DEGREE BY A LEAST SQUARES PROCEDURE. FAST DATA ENTRY, SIMPLE DATA HANDLING, DELETING AND ADDING DATA PAIRS ARE POSSIBLE AT ANY TIME. PROJECTIONS OF Y-VALUES CAN BE MADE.

224PROGRAM STEPS
WIM DEN HOLLANDER
NL- DELFT

60176D 97-TWO WAY ANALYSIS OF VARIANCE -(WITH REPLICATIONS)

THIS PROGRAM ANALYSES THE VARIABILITY OF A SET OF DATA. IT TESTS ROW EFFECTS, COLUMN EFFECTS AND INTERACTION EFFECTS AND GENERATES THE COMPLETE ANOVA TALBE. IF THE LOSS OF OBSERVATIONS IN AN EXPERIMENTAL DESIGN LEADS TO A DATA TABLE WITH UNEQUAL CELL FREQUENCIES THIS PROGRAM ALLOWS FOR AN ANALYSIS BY THE METHOD OF UNWEIGHTED MEANS. BUT IF CELL FREQUENCIES WERE EQUAL THE COMPUTATIONAL PROCEDURE JUST AS WELL LEADS TO ALGEBRAICALLY CORRECT RESULTS.

224PROGRAM STEPS
WOLFGANG SCHOENRADE
D - HAMBURG

60177D 97-ULTIMATE AXAIL STRENGTH OF H-SHAPED STEEL COLUMNS

IN ACCORDANCE WITH THE "EUROPEAN BUCKLING CURVES "THE PROGRAM GENERATES A TABLE LISTING THE ULTIMATE AXIAL STRENGTH ALONG X-X AND Y-Y AXIS OF 20 OF THE MOST COMMONLY USED H-SHAPES. ITS USEFULNESS IS PARTICULARLY CONVENIENT WHEN DESIGNING A BUILDING WITH REPETITIVE STOREY HEIGHTS. "THE PROPERTIES CARD" CONTAINS 10 IPB1 AND 10 IPB, RANGING FROM 160 TO 340 MM. OTHER CARDS FULLFILLING DIFFERENT NEEDS ARE EASY TO PREPARE.

169PROGRAM STEPS
PHILIPPE HERTIG
CH - LAUSANNE

60178D 97-DIRECT PIAL COMPILER

PIAL MEANS PROGRAMMING IN ALGEBRAIC LANGUAGE. PIAL CONSISTS OF ASSIGNMENT, LOOP AND I/O INSTRUCTIONS. PIAL PROVIDES A MACHINE INDEPENDANT WAY TO WRITE SHORT PROGR. QUICKLY. ALTHOUGH PAIL WAS DISIGNED WHEN WRITING A COMPILER FOR THE HP-97, USERS OF OTHER PROGRAMMABLE CALC. WITH SUFFICIENT MEMORY SPACE COULD WRITE PIAL COMPILERS FOR THEIR CALC. THE USE OF A COMPILER PROVIDES INSIGHT INTO SPECIFIC COMPUTER PROBLEMS AND MAKES IT POSSIBLE TO ADAPT THE MACHINES POSSIBILITIES TO MAKE OWN DEMANDS.

224PROGRAM STEPS
PETER C SCHMALE
NL - DELFT

60179D 97-PIAL EXECUTER

PROGRAM EXECUTES NUMERICALLY CODED INSTRUCTIONS IN THE DATA REGISTER. THE INSTRUCTION SET IS THE SAME AS THAT OF THE DIRECT PIAL COMPILER SO THAT COMPILER PIAL PROGRAMS CAN BE EXECUTED. IT IS ALSO POSSIBLE TO ENTER A PROGRAM IN THE FORM OF 1-DIGIT NUMBERS. THE SOFTWARE THAT MAKES A FOR-NEXT LOOP POSSIBLE IS CONTAINED IN THIS PROGRAM.

224PROGRAM STEPS
PETER C SCHMALE
NL - DELFT

60180D 97-PIAL EDITOR

WITH THIS PROGRAM THE USER CAN ENTER AND EDIT A PIAL-PROGRAM IN

60180D (CONTD)

THE CALCULATOR. BECAUSE THE EDITOR LEAVES THE PIAL-PROGRAM IN UNCOMPILED FORM, SUCH INSTRUCTIONS AS INSERT, DELETE, SINGLE STEP AND BACK STEP ARE POSSIBLE. THE CODED PROGRAM CAN BE COMPILED USING THE "INDIRECT PIAL COMPILER", WHICH MAKES EXECUTION WITH THE "PIAL EXECUTOR" POSSIBLE.

224PROGRAM STEPS
PETER C SCHMALE
NL - DELFT

60181D 67-SINKING SHIPS

TEN SHIPS OF VARIOUS SIZES ARE RANDOMLY GENERATED AND HIDDEN IN A 10 X 10 GRID. IN THIS OLD SCHOOL-GAME YOUR TASK IS TO HIT AND SINK THESE SHIPS USING AS FEW BOMBS AS POSSIBLE. AFTER EACH BOMB HP-67/97 OUTPUTS SELECTED SQUARE AND RESULT. IF A HIT IS MADE, TYPE OF SHIP THAT WAS HIT IS SHOWN EXACTLY AS IN THE ORIGINAL GAME.

224PROGRAM STEPS
GORAN THORNBLAD
S - BROMMA

60182D 67-MONTE CARLO

ONE OR TWO PLAYERS CAN PLAY ROULETTE AGAINST THE HP 67/97 ACTING AS BANK AND CROUPIER. EACH PLAYER CAN BET UP TO 50.000.000 UNITS OF YOUR CURRENCY ON MAX. 7 OF 9 DIFFERENT TYPES OF STAKES. IF YOU MANAGE TO BREAK THE BANK, THIS IS OUTPUT AND GAME IS OVER. THE ROULETTE WHEEL INDICATES RED AND BLACK NUMBERS ACCORDING TO THE RULES OF ROULETTE AND CAN BE USED SEPARATELY.

224PROGRAM STEPS
GORAN THORNBLAD
S - BROMMA

60183D 97-FIVE-FIELD BEAM, EXTREME BENDING MOMENTS (OWN WEIGHT / USEFUL LOAD)

THE PROGRAM COMPUTES THE MAX. AND MIN. BENDING MOMENTS FOR UNIFORMLY DISTRIBUTED LOAD (OWN WEIGHT AND USEFUL LOAD). SPAN LENGTH CAN BE DIFFERENT AND MOMENTS OF INERTIA CAN BE DIFFERENT FROM SPAN TO SPAN. THE DISTANCE FROM LEFT SUPPORT TO THE PLACE OF EXTREME MOMENT IS ALSO COMPUTED.

224PROGRAM STEPS
HANSPETER BERNET
CH - BERN

60184D 97-EARTH-THRUST ON A RETAINING WALL WITH BACK-PLACED SLOPE.

PROGRAM COMPUTES THE EARTH-THRUST ON A RETAINING-WALL WHEN THE SLOPE ABOVE THE WALL IS PLACED BACK AND PLANES AND SLOPE CAN BE CHARGED WITH DIFFERENT LOADS. EARTH-THRUST IS DETERMINED BY COULOMBS' LAW.

190PROGRAM STEPS
HANSPETER BERNET
CH - BERN

60185D 97-INFLUENCE LINES OF SUPPORT-MOMENTS OF CONTINUOUS BEAMS (7SP)

THE PROGRAM COMPUTES THE INFLUENCE-LINES OF SUPPORT-MOMENTS, CONSOLES INCLUDED, UP TO 7 SPANS AND LISTS THEM UP. AFTER THE INPUT OF NUMBER OF SPANS, NUMBER OF COMPUTED POINTS AND LENGTHS OF SPANS THE PROGRAM DOES ALL AUTOMATICALLY.

224PROGRAM STEPS
HANSPETER BERNET
CH - BERN

60186D 67-FORCES OF A COUPLE ROOF

60186D (CONTD)

00000D -(SPARRENDACH)

GIVEN THE DIMENSIONS OF A COUPLE ROOF THE PROGRAM COMPUTES THE REACTION FORCES VA,VB,HA,HB,M MAXIMUM BENDING MOMENT) AND THE LONGITUDINAL FORCES NA,NB FOR THE LOAD CASES, DEAD LOAD, SNOW LOAD (DATA ACCORDING TO GERMAN REG. DIN 1055 ARE OPTIONAL), AND WIND LOAD.

208PROGRAM STEPS
CLAUS MARTIN DACHSELT
D - WITTEN-ANNEN

60187D 67-FORCES IN A RECTANGULAR TWO-HINGED FRAME

PROGRAM COMPUTES THE REACTION FORCES HA,HD,VA,VD AND THE MOMENTS AT THE KNEES OF FRAME MB,MC IN A RECTANGULAR TWO-HINGED FRAME. TAKEN INTO ACCOUNT ARE THE LOAD CASES: DISTRIBUTED AND POINT LOAD (ANY LOCATION) ON THE CROSS BAR AND HORIZONTAL DISTRIBUTED AND POINT LOAD (ANY LOCATION) ON THE STEMS.

200PROGRAM STEPS
CLAUS-MARTIN DACHSELT
D - WITTEN-ANNEN

60188D 97-FITTING OF DATA BY THEORETICAL DISTRIBUTIONS.

PROGRAM FITS A SET OF DATA TO: A BINOMINAL DISTRIBUTION, A POISSON DISTRIBUTION, A NORMAL DISTRIBUTION.

224PROGRAM STEPS
HARTMUT REH
D - BERNKASTEL-KUES

60189D 67-GERMAN INCOMETAX AND CHURCH RATE SINCE 1979

PROGRAM CALCULATES NEW GERMAN INCOMETAX AND CHURCH RATE (VALID SINCE JANUARY 1979) FOR GROUND AND SPLIT TARIFF AS AMOUNT, % AND % ON TOP.

222PROGRAM STEPS
HEINZ RECHMANN
D - LEVERKUSEN

60190D 67-TIMER

THIS PROGRAM CONTAINS FIVE DIFFERENT TIMERS: 5 SECOND INTERVAL VISIBLE TIMER; MINIMUM INTERVAL VISIBLE TIMER: COUNT-UP TIMER; COUNT-DOWN TIMER;SPLITS (UP TO 15). AUTOMATIC CALIBRATION ROUTINES ARE INCLUDED FOR FAST CORRECTION OF INTERNAL CONSTANTS TO SUIT THE CHARACTERISTICS OF THE CALCULATOR WHEN IN USE.

220PROGRAM STEPS
SIDNEY WALLACE ECKETT
UK - BUCKHURST HILL

60191D 97-THERMODYNAMIC FUNCTIONS OF TEMPERATURE

IT IS ASSUMED THAT IN A FINITE TEMPERATURE INTERVAL GIBBS FREE ENERGY CAN BE EXPRESSED BY: G=G0+G1*T+G2*T**2+G3*T**3+GAMMA*T*LN(T). WITH THE FIVE COEFFICIENTS AS INPUT THE PROGRAM SETS UP THE COEFICIENTS OF SIMILAR EXPRESSIONS FOR THE ENTHALPY, HEAT CAPACITY ENTROPY AND EQUILIBRIUM CONSTANT. VALUES OF THESE FUNCTIONS CAN BE CALCULATED FOR ANY TEMPERATURE. TEMPERATURES FOR WHICH A THERMODYNAMIC FUNCTION HAS A GIVEN VALUE CAN BE FOUND BY ITERATION.

221PROGRAM STEPS
KNUD ANDERSEN
DK - VEDBAEK

60192D 97-6 SIMULTANEOUS EQUATIONS IN

60192D (CONTD)

00000D 6 UNKNOWNS

THE CALCULATOR INSTRUCTS THE USER WHICH DATA VALUE TO ENTER, BY DISPLAYING THE INDICES UNTIL ALL VALUES HAVE BEEN ENTERED. THE ANSWER WILL THEN BE PRINTED OUT.

224PROGRAM STEPS
NORBERT GERBER
D - REMAGEN

60193D 97-T STATISTICS (EXPANDED)

THIS PROGRAM IS AN EXPANDED VERSION OF 00115D (PAIRED T STAT. + T STAT. FOR TWO MEANS). MAIN ADDITIONS ARE: DATA SET MAY ALSO BE ENTERED AS X-AVERAGE/S/N; WHEN DATA SET IS ENTERED AS INDIVIDUAL POINTS THESE 3 CHARACTERISTICS MAY ALSO BE CALCULATED; DIFFERENT SETS MAY BE COMPARED AGAINST ONE MASTER SET; MORE EFFICIENT.

214PROGRAM STEPS
PETER VAN DEN HAMER
NL - THE HAGUE

60194D 67-AUTOMATIC CURVE FIT

THIS PROGRAM COMPUTES WITH CARD I THE COEFFICIENT OF DETERMINATION OF Y=A*X+B, Y=A*EXP(B*X), Y=A*LN(X) AND Y=A*X**B, IT SELECTS THE CURVE WITH LARGEST COEFFICIENT OF DETERMINATION AND COMPUTES THE REGRESSION COEFFICIENTS A AND B. CARD II COMPUTES Y ON A GIVEN X OR X ON A GIVEN Y. DATA-PAIRS CAN BE CHANGED AT ANY TIME (EVEN AFTER RUNNING THE PROGRAM).

252PROGRAM STEPS
JAN ARNOUD TEN CATE
NL - AMSTERDAM

60195D 67-50 DATA STORAGE

YOU CAN STORE AND RECALL IN YOUR CALCULATOR UP TO 50 DATA WITH THE OPERATING LIMIT FOR EACH DATA X : 10**-4<=OR/X/<10**4.

088PROGRAM STEPS
LUIGI POMINI
I - CASTELLANZA

60196D 67-40 DATA STORAGE

YOU CAN STORE AND RECALL IN YOUR CALCULATOR UP TO 40 DATA WITH THE OPERATING LIMIT FOR EACH DATA X : 10**-5<OR=X<10**5

198PROGRAM STEPS
LUIGI POMINI
I - CASTELLANZA

60197D 97-CONTINUOUS BEAM OF 2 TO 8 CONTINUOUS BEAM

THIS PROGRAM CALCULATES THE SUPPORT MOMENTS OF CONTINUOUS BEAM RESTING ON 3 TO 9 SUPPORTS WITH DIFFERENT SPANS. MOMENT OF INERTIA CAN BE DIFFERENT FROM SPAN TO SPAN. THE PROGRAM ACCEPTS DISTRIBUTED LOADS, TRAPEZIUM LOAD ON PART OF SPAN, POINT LOADS, MOMENTS, TEMPERATURE OR ANY COMBINATION OF ALL.

224PROGRAM STEPS
HANNES ROP
A - GRAZ

60198D 67-AIR NAVIGATION PROGRAM

THIS PROGRAM ACCEPTS THE TRUE TRACK AND THE DISTANCE OF A LEG TO BE FLOWN EITHER DIRECTLY FROM THE KEYBOARD OR VIA A LEG SEQUENCE NUMBER FROM A DATA CARD, AND COMPUTES DRIFT CORRECTION ANGLE, TRUE HEADING, MAGNETIC HEADING, GROUNDSPEED, FLIGHT TIME PER LEG AND TOTAL FLIGHT TIME. IT ALSO

60198D (CONTD)

COMPUTES LANDING HEAD- AND CROSS-WIND COMPONENTS. LEG DATA CARDS CAN CONTAIN UP TO 40 LEGS. A SEPARATE PROGRAM IS AVAILABLE TO WRITE DATA CARDS.

165PROGRAM STEPS
J E MEBIUS
NL - BERKEL

60199D 67-AIR NAVIGATION LEG DATA PROGRAM

WITH THIS PROGRAM ONE CAN BUILD, UPDATE AND INSPECT LEG DATA (I.E., TRACK AND DISTANCE TO BE FLOWN) AND WRITE THEM ONTO A DATA CARD. ONE CARD ACCOMMODATES TWO TRACKS EACH CONTAINING DATA OF UP TO 20 LEGS. THESE DATA CARDS MAY BE USED IN CONNECTION WITH THE AIR NAVIGATION PROGRAM FROM THE SAME AUTHOR.

120PROGRAM STEPS
J E MEBIUS
NL - BERKEL

60200D 67-DIFFERENTIAL EQUATIONS -RUNGE-KUTTA GILL METHOD

THIS PROGRAM SOLVES A SYSTEM OF N SIMULTANEOUS LINEAR OR NON LINEAR DIFFERENTIAL EQUATIONS. THE PROGRAM ACCOMMODATES UP TO 5 DIFFERENTAIL EQUATIONS. PROGRAM STEPS 164 THROUGH 224 ARE AVAILABLE FOR GENERATING THE DIFFERENTIAL EQUATIONS. THE SUBROUTINE IS CALLED BY GSB 0.

163PROGRAM STEPS
GIUSEPPE TOSATTO
I - PADOVA

60201D 67-APPROXIMATION BY LEGENDRE POLYNOMIALS UP TO DEGREE 7

THIS PROGRAM APPROXIMATES A FUNCTION, DEFINED BY A SET OF EQUALLY SPACED DATA POINTS, BY LEGENDRE POLYNOMIALS OF ANY DEGREE UP TO 7, USING THE LEAST SQUARES METHOD. SIMULTANEOUS COMPUTATION OF UP TO 8 COEFFICIENTS AND OF THE SUM OF SQUARED ERRORS FOR EACH DEGREE. CHOICE BETWEEN TRAPEZIUM, SIMPSON OR NEWTON-COTES (5) INTEGRATION. PROJECTIONS OF Y VALUES CAN BE MADE THE ORTHOGONAL LEGENDRE FUNCTIONS AVOID LONG MATRIX OPERATIONS, SO THAT THE PROGRAM IS VERY SHORT AND SAFE.

223PROGRAM STEPS
HENRIQUE E ADLER
P - OPORTO

60202D 67-CONVERSION OF LEGENDRE POLYNOMIALS INTO POWER SERIES

THIS PROGRAM IS AN OPTIONAL COMPLEMENT TO PROGRAM NR. 60201D; WHICH GIVES THE COEFFICIENTS OF A SERIES OF LEGENDRE POLYNOMIALS UP TO DEGREE 7. THIS PROGRAM CONVERTS THOSE COEFFICIENTS INTO THE COEFFICIENTS OF AN ORDINARY POWER SERIES WITH ARGUMENT X.

217PROGRAM STEPS
HENRIQUE E ADLER
P - OPORTO

60203D 67-FIRST ORDER SMOOTHING OF UNEQUALLY SPACED DATA POINTS

DATA POINTS WHICH ARE SCATTERED DUE TO RANDOM ERRORS OF OBSERVATION OR OTHER RANDOM INFLUENCES SHOULD BE SMOOTHED, BEFORE POLYNOMIAL APPROXIMATION OR ANY OTHER CURVE FIT IS CARRIED OUT. THIS PROGRAM WAS SPECIALLY CONCEIVED FOR SCATTERED DATA POINTS WHICH ARE NOT EQUALLY SPACED AND PERFORMS SINGLE, DOUBLE OR TRIPLE SMOOTHING OF FIRST ORDER.

188PROGRAM STEPS

60203D (CONTD)

HENRIQUE E ADLER
P - OPORTO

60204D 67-THIRD ORDER SMOOTHING OF EQUALLY SPACED DATA POINTS

DATA POINTS WHICH ARE SCATTERED DUE TO RANDOM ERRORS OF OBSERVATION OR OTHER RANDOM INFLUENCES SHOULD BE SMOOTHED, BEFORE POLYNOMIAL APPROXIMATION OR ANY OTHER CURVE FIT IS CARRIED OUT. THIS PROGRAM DOES SINGLE, DOUBLE OR TRIPLE SMOOTHING OF A SET OF EQUALLY SPACED DATA POINTS. THE SMOOTHING IS OF THIRD ORDER.

180PROGRAM STEPS
HENRIQUE E ADLER
P - OPORTO

60205D 67-LEGENDRE APPROXIMATION FOR UNEQUALLY SPACED DATA POINTS

THIS PROGRAM APPROXIMATES A FUNCTION, DEFINED BY A SET OF UNEQUALLY SPACED DATA POINTS, BY LEGENDRE POLYNOMIALS OF ANY DEGREE UP TO 7, USING THE LEAST SQUARES METHOD. SIMULTANEOUS COMPUTATION OF UP TO 8 COEFFICIENTS AND OF THE SUM OF SQUARED ERRORS FOR EACH DEGREE. A GENERALIZED SIMPSON FORMULA GIVING THIRD ORDER APPROXIMATION IS USED FOR THE INTEGRATIONS. PROJECTIONS OF Y VALUES CAN BE MADE THE PROGRAM MAY BE USED FOR EQUALLY SPACED POINTS BUT NR 60201D WOULD BE BETTER FOR THAT.

212PROGRAM STEPS
HENRIQUE E ADLER
P - OPORTO

60206D 67-PHARMACOKINETIC PARAMETER

STANDARD PHARMACOLOGIC PROBLEMS CAN BE SOLVED BY USING THIS PROGRAM. FOLLOWING PARAMETERS WERE ACCEPTED BY THE PROGRAM: HALF-LIFE-PERIOD, SUBSIDENCE QUOTE, DISTRIBUTION VOLUME, DOSAGE, WEIGHT, DOSAGE INTERVAL, PLASMA CONC., CUMULATION FACTOR, SATURATION FACTOR, SUBSIDENCE FACTOR, NUMBER OF DOSAGE INTERVALS FOR 90% MAX, PLASMA CONC. MEDIUM PLASMA CONC., COTT (CONCENTRATION TIMES TIME")

319PROGRAM STEPS
LUDWIG STRAUSS
D - BUERSTADT

60207D 97-PLOTTING MATHEMATICAL FUNCTIONS

THE PROGRAM PLOTS ANY MATHEMATICAL FUNCTION WITHIN A CHOSEN RANGE AND A CHOSEN DIFFERENCE OF THE ABSCISSA VALUES WITH +-5% ACCURACY OVER THE RANGE OF THE ORDINATE VALUES.
SIDE 1 PLOTS THE GRAPH WITH BEAMS OF 1S, SIDE 2 PLOTS THE GRAPH WITH DECIMAL POINTS, 1S ON THE LEFT AND 0S ON THE RIGHT SIDE OF THEM.

104PROGRAM STEPS
WOLFGANG ISSLER
D - STUTTGART

60208D 67-DATAFLEX 210 A FLEXIBLE DATA STORAGE SYSTEM

DATAFLEX 210 IS A PROGRAM FOR STORING AND RECALLING A MAXIMUM OF 210 VALIDATED, POSITIVE INTEGER, DATA ELEMENTS IN TABULAR FORM. UP TO 21 ROWS AND 10 COLUMNS MAY BE SPECIFIED; DATA RANGE IS DEPENDENT ON THE NUMBER OF COLUMNS SELECTED. THE STORE AND RECALL OF DATA ELEMENTS IS AVAILABLE IN DATUM, ROW COLUMN AND ARRAY FORMAT. A STATUS WORD MAY BE DISPLAYED WHICH CONTAINS INFORMATION DESCRIBING THE CURRENT ARRAY.

217PROGRAM STEPS

60208D (CONTD)

D T RANSOM
UK - KENT

60209D 97-RESECTION HYDROGRAPHIC STATION POINTER RESECTION 1

THE PROGRAM EXTRACTS THE CO-ORDINATES OF THE THREE SELECTED STATIONS FROM THE SEVEN CONTAINED IN THE STORES, PERFORMS THE RESECTION AND PRINTS EITHER THE CO-ORDINATES OF THE OBSERVING STATION AND THE OBJECT CODE OR THE MILLIMETRIC PLOTTING DISTANCES FROM A LOCAL ORIGIN. THE PROGRAM THEN RESETS FOR THE NEXT FIX.

219PROGRAM STEPS
MIKE STEPHENSON
UK - WILLERBY HULL

60210D 67-HYPERBOLA FITTING

THE PROGRAM FITS A SET OF DATA POINTS TO TWO TYPES OF HYPERBOLAS.

173PROGRAM STEPS
ALEXANDER WEIGELT
CH - ST-GALLEN

60211D 67-HOUND AND RABBIT

TWO PURSUIT GAMES: ON A N BY 50 RECTANGLE A "RABBIT" MOVES. THE PLAYER, MOVING SIMILARLY, AIMS TO HIT ITS COORDINATES.
FIRST MODE: THE RABBIT CAN ACCELERATE TWICE AS FAST AS THE HOUND , BUT MOVES COMPLETELY AT RANDOM.
SECOND MODE: BOTH HAVE THE SAME POSSIBILITIES, BUT THE RABBIT SENSES THE PRESENCE OF THE TOO NEAR HOUND, THEN CHOOSING THE BEST POSSIBLE ESCAPE.
NEVERTHELESS, YOU MAY FIND A STRATEGY TO HUNT IT DOWN.

224PROGRAM STEPS
FRANZ KIRCHHEIMER
CH - FREIBURG

60212D 67-PERMUTATIONS

INPUT: A SET OF ANY 2<=N<=23 REAL NUMBERS (E.G.: 13,7,3,7,13).
OUTPUT: EITHER ./NEXT PERMUTATION (13,7,3,13,7), OR ./BASIC NATURAL PERMUTATION (3,7,7,13,13), OR ./LIST OF ALL PERMUTATIONS, OR ./LIST OF ALL REMAINING PERMUTAIONS GIVEN THE INPUT. -2 INPUT AND 2 DISPLAY/OUTPUT ROUTINES. -FAST REGISTER SORTING SBR INCLUDED.

140PROGRAM STEPS
JIM KUTSCHERA
D - MOERFELDEN-WALLDORF

60213D 67-X RAY FLUORESCENSION LINEAR PARABOLIC AND HYPERB CURVE FIT

GENER. THE SAME AS 51219D, BUT OUTPUTS RV (REMINDER VARIANCE) A A BETTER BASE FOR COMPARISSION INSTEAD OF SNN**2. PROGRAM ALSO FITS FOR HYPERBOLIC CURVE. DATA PAIRS ARE TO BE PUT IN, ONLY ONCE, TO CALCULATE REGRESSION COEFF., VARIANCE ON THAT COEFF. AND RV(LIN) AND RV(PAR). OPTION TO DELETE ERRON DATA PAIR(S).

281PROGRAM STEPS
JOHAN DECAT
B - GENT

60214D 67-CAR PARAMETERS

PROGRAM CALCUALTES D KM*, #KM, #PRICE, PRICE/KM, PRICE/KM (MEAN), DL, #LITER, L/100 KM, L/100 KM (MEAN), PRICE INDEX. IT WARNS YOU WHEN IT IS TIME TO CHANGE YOUR OIL AND PROMPTS YOU TO RECORD DATA FOR NEXT CASE (=TIME). THE PROGRAM WORKS FOR AS MANY CARS YOU WANT

60214D (CONTD)

PROVIDED YOU LOAD THE DATA ON HALF A DATA CARD.
(* D=INCREASE #=SUM) YOU ONLY HAVE TO INPUT KM PRES, PRICE PAID, PRICE /LITER, KM TO CHANGE YOUR OIL.
IT ALSO ACCEPTS MILES AND GALLONS.

105PROGRAM STEPS
JOHAN DECAT
B - GENT

60215D 67-NONLINEAR OPTIMIZATION

PROGRAM MINIMIZES FUNCTIONS OF UP TO 5 VARIABLES BY THE METHOD OF STEEPEST DESCENT. EVEN FUNCTIONS SUBJECT TO CONSTRAINTS CAN BE HANDLED BY REPLACING THE CONSTRAINTS BY A PENALTY FUNCTION.

156PROGRAM STEPS
GUIDO PETZ
S - SOLMA

60216D 67-SYSTEMS OF DIFFERENTIAL EQUATIONS

PROGRAM SOLVES SYSTEMS OF UP TO 4 1TH ORDER DIFFERENTIAL EQUATIONS OR OF 2 2TH ORDER C.E. SOLVES EVEN 3TH AND 4TH ORDER C.E. THE 4TH RUNGE-KUTTA METHOD IS USED.

158PROGRAM STEPS
GUIDO PETZ
S - SOLMA

60217D 67-CYLINDRIC HELICAL SPRING DESIGN

THIS PROGRAM COMPUTES ALL DATA REQUIRED TO DESIGN CYLINDRIC HELICAL SPRINGS OF ROUND WIRE FOR STATIC OR ALTERNATING LOADS.

208PROGRAM STEPS
KONRAD SCHARRER
D - MONHEIM-BAUMBERG

60218D 67-DISC SPRINGS

THIS PROGRAM COMPUTES ALL DATA REQUIRED TO USE DISC SPRINGS.

224PROGRAM STEPS
KONRAD SCHARRER
D - MONHEIM-BAUMBERG

60219D 67-YATZY

FIVE PEOPLE CAN JOIN THE GAME. FIVE DICE AND 1-3 THROWS 15 TIMES TO STRIKE 1'S, 2'S, 3'S, 4'S,5'S, 6'S WHICH TOGETHER MUST BE AT LEAST 63 TO GET THE BONUS OF 50 POINTS. FURTHERMORE, YOU WILL STRIKE ONE AND TWO PAIRS, THREE AND FOUR OF A KIND, SMALL AND BIG STRAIGHT, FULL HOUSE, CHANCE AND YATZY. TO WIN THE GAME IT IS NOT ONLY A QUESTION OF LUCK.

223PROGRAM STEPS
ARNE HAVELAND
S - EMMABODA

60220D 67-RECTANGLES HELD IN A CIRCLE

PROGRAM CALCULATES THE MAXIMUM NUMBER OF RECTANGLES WHICH ARE POSSIBLE TO BE PLACED IN A CIRCLE. YOU HAVE TO INPUT THE SIZE OF THE RECTANGLES AND OF THE CIRCLE.
ALL THE RECTANGLES IN A CIRCLE MUST BE THE SAME.

064PROGRAM STEPS
LUIGI POMINI
I - CASTELLANZA

60221D 97-NUMERICAL DIFFERENTIATION

WITH LEAST SQUARE METHOD PROGRAM FITS A POLYNOMIAL OF 2ND ORDER TO A GIVEN SET (ODD NUMBER) OF POINTS AND CALCULATES 1ST AND 2ND DERIVATIVE IN THE MIDDLE POINT OF

60221D (CONTD)

INTERVAL. WORKING UP STEPWISE A LARGER NUMBER OF POINTS A MINIMUM INPUT IS PROVIDED.

224PROGRAM STEPS
BERND DUMBACHER
D - FRANKFURT AM MAIN

60222D 97-DISCRETE NUMERICAL INTEGRATION SEVERAL FUNCTIONS

BY MEANS OF SIMPSON'S RULE PROGRAM CARRIES OUT NUMERICAL INTEGRATION OVER THE FUNCTIONS F, F**2, G, G**2 AND F.G. THE FUNCTIONS F AND G
A. ARE GIVEN NUMERICALLY BY THE DATA SETS F1, F2,...FN AND G1,G2 ...GN OR
B. ARE CALCULATED WITH THE EXPLICITELY GIVEN FUNCTIONS F(X) AND G(Y) FROM THE DATA SET (X1)
THE FUNCTIONS F AND G (CASE B) HAVE TO BE INSERTED INTO THE PROGRAM.
UNDER CERTAIN CONDITIONS ERRORS ARE ESTIMATED.

165PROGRAM STEPS
BERND DUMBACHER
D - FRANKFURT AM MAIN

60223D 97-NUMERICAL INTEGRATION WITH STIRLING'S FORMULA

PROGRAM CARRIES THROUGH NUMERICAL INTEGRATION OF AN EXPLICITELY KNOWN FUNCTION ACCORDING TO STIRLING'S DIFFERENCE FORMULA. IT IS POSSIBLE TO VARY THE STEP WIDTH AS WELL AS THE DEGREE OF DIFFERENCES, AND SUCH TO IMPROVE THE RESULTS.

162PROGRAM STEPS
BERND DUMBACHER
D - FRANKFURT AM MAIN

60224D 67-TRUE COURSE TO COMPASS C. AND VICE VERSA

GIVEN THE DEVIATION COEFF. OF A COMPASS INCLINATION OF THE SHIP AND THE TRUE COURSE, THE COMPASS COURSE IS COMPUTED. AND VICE VERSA.
THE PROGRAM MAY BE COMPENSATED FOR VARIATION AND DRIFT. AND DEVIATION BY INCLINATION.

103PROGRAM STEPS
WILLEM BRUNINGS
NL - BILTHOVEN

60225D 67-ALL DIGITS OF N! (15<N<155)

THIS PROGRAM COMPUTES ALL DIGITS OF N! (15<N<155). IT CAN ALSO FIND THE NUMBER OF DIGITS AND THE NUMBER OF ZEROS OF N! FOR EVERY INTEGER N.

215PROGRAM STEPS
PIERRE MOLINARO
F - NANTES

60226D 67-GREAT NUMBERS MULTIPLICATION: 120X120

THIS PROGRAM MULTIPLIES TWO INTEGERS UP TO 120 DIGITS EACH. ALL SIGNIFICANT DIGITS OF THE RESULT CAN BE DISPLAYED. NO DATA CARD.

095PROGRAM STEPS
PIERRE MOLINARO
F - NANTES

60227D 97-TURNING CLOTHOIDE (2D ED.)

THE TURNING CLOTHOIDE CONSISTS OF TWO SIMPLE CLOTHOIDES OF OPPOSITE DIRECTIONS. THE PARAMETER OF EACH SIMPLE CLOTHOIDE IS PRESUMED TO BE KNOWN, AS WELL AS THE RADIUS OF THE CIRCULAR ARC AT THE END OF EACH SIMPLE CLOTHOIDE. THE PROGRAM COMPUTES THE PRINCIPAL ELEMENTS OF THE TURNING CLOTHOIDE.

218PROGRAM STEPS
CHRISTIAN SCHLEIFER

60227D (CONTD)

D - HAMBURG

60228D 67-FOOD COMPOSTION

COMPUTES THE TOTAL AMOUNT AND % OF EACH COMPONENT OF A RECIPE CONTAINING VARIOUS INGREDIENTS, USING DATA CARDS.

114PROGRAM STEPS
ROBERT FREDERIC MENZI
CH - GENEVA

60229D 67-DISTRIBUTION INTO 100 COUNTERS, EACH HOLDING 99 COUNTS

THE CALCULATOR IS CHANGED INTO 100 COUNTERS, EACH WITH A CAPACITY OF 99 COUNTS. THE COUNTERS MAY BE READ SINGLY, OR STEPPING THROUGH THEM ALL, SKIPPING THE EMPTY ONES. CUMULATED SUMS OF THE CONTENTS AND THE SUMS OF THE PRODUCTS OF THE NUMBER OF A COUNTER WITH ITS CONTENT ARE PRODUCED AND MAY BE READ STEPWISE OR AS THE FINAL RESULT. USEFUL IN SORTING FREQUENCIES.

187PROGRAM STEPS
OLAF THOMSEN
DK - RISSKOV

60230D 97-REGRESSION WITH UP TO 5 EXOGENEOUS VARIABLES

MODEL MAY CONTAIN FROM 1 UP TO 5 EXOGENEOUS VARIABLES. REGRESSORS ARE DETERMINED BY LEAST SQUARES METHOD. STATISTICS INCLUDE R**2, DEG. OF FREEDOM, S**2, F, T OF REGRESSORS AND DURBIN. WATSON COEF. DATA INPUT BY MAGNETIC CARDS PROVIDED TO AVOID MULTIPLE DATA KEYING.
WORKS ONLY IN CONNECTION WITH PROGRAM 6X6 MATRIX (50171 D).

752PROGRAM STEPS
PETER PESCHEL
D - ESSEN

60231D 67-ONLY WITH STACK AND LAST X

THIS PROGRAM COMPUTES WITHOUT USING RC TRU R25:
A. THE ROOTS OF A QUADRATIC EQUATION
B. THE ANGLES AND THE AREA OF A TRIANGLE WITH GIVEN SIDES
C. THE GREATEST COMMON DIVISOR AND LEAST COMMON MULTIPLE OF TWO POSITIVE INTEGERS
D. THE PARTITION OF A POSITIVE INTEGER INTO DIFFERENT POS./NEG. POWERS OF BASE 3.

133PROGRAM STEPS
HANS AUSEMS
NL - BREDA

60232D 67-MASTERMIND 45 FORMATS

FIRST HP COMPUTES A RANDOM NUMBER OF UP TO 9 DIFFERENT NON ZERO POSITIVE INTEGERS. THEN YOU MAY GUESS THAT HIDDEN NUMBER. AFTER EACH GUESS HP GIVES AN INDICATION TO HELP YOU.
YOU CAN ALSO USE THIS PROGRAM TO GET A RANDOM NUMBER OF UP TO 19 DIFFERENT NON ZERO POSITIVE INTEGERS.

114PROGRAM STEPS
HANS AUSEMS
NL - BREDA

60233D 67-ARRANGE AN ARRAY FROM SMALL TO LARGE

THIS PROGRAM ORDERS, AT THE SAME TIME, M SUBSETS OF N NUMBERS FROM SMALL TO LARGE,M*N<=16, M MAY BE 1. AND WHEN M*N<=8 AND M=2 OR M=4, PROGRAM CONTINUES TO ORDER. IN A WAY DIFFERENT FROM ABOVE, ALL

60233D (CONTD)

SUBSETS TO ONE SINGLE ORDERED SET.

183PROGRAM STEPS
HANS AUSEMS
NL - BREDA

60234D 67-MAGIC SQUARE OF 16 FIELDS

THIS PROGRAM COMPUTES ALL PERMUTATIONS OF 16 DIFFERENT POSITIVE INTEGERS OUT OF THE SET 1,2,3,...,N , N>=16 AND CONTROLS IF THOSE PERMUTATIONS SATISFY THE CONDITIONS OF A MAGIC SQUARE OF 4X4 FIELDS.

182PROGRAM STEPS
HANS AUSEMS
NL - BREDA

60235D 67-MAGIC SQUARE OF 9 FIELDS

THIS PROGRAM COMPUTES ALL PERMUTATIONS OF 9 DIFFERENT POSITIVE INTEGERS OUT OF THE SET 1,2,3,...,N , N>=9 AND CONTROLS IF THOSE PERMUTATIONS SATISFY THE CONDITIONS OF A MAGIC SQUARE OF 3*3 FIELDS.

097PROGRAM STEPS
HANS AUSEMS
NL - BREDA

60236D 67-PRIMEFACTORS AND PRIMENUMBERS

THIS PROGRAM:
A-COMPUTES THE PRIMEFACTORS OF A POSITIVE INTEGER AND
B-GIVES ALL PRIMENUMBERS >=2 OR >=A
THE ALGORITHMS ARE SHORT AND FAST WORKING.

113PROGRAM STEPS
HANS AUSEMS
NL - BREDA

60237D 67-LEVEL VARIATION IN THE SURGE SHAFT

PROGRAM CALCULATES THE LEVEL VARIATION IN THE SURGE SHAFT TANK WHEN THE CONDUIT FLOW IS STOPPED INSTANTANEOUSLY OR PRACTICALLY INSTANTANEOUSLY.
HEAD LOSS COEFFICIENT FOR FLOW THROUGH SURGE SHAFT THROAT IS ALL THE TIME CONSTANT.

112PROGRAM STEPS
FRANC TOMSIC
YU - LJUBLJANA

60238D 67-FRACTIONAL EFFICIENCY OF CYCLONES

THE PROGRAM DETERMINES THE FRACTIONAL EFFICIENCY OF CYCLONES ON THE BASIS OF CYCLONE DIMENSIONS AND THE FLOW CHARACTERISTICS OF PARTICLE-LADEN GASES. METRIC OR ENGLISH UNITS ARE APPLICABLE.

358PROGRAM STEPS
GIUSEPPE LIGATO
I - CUSANO MILANINO

60239D 67-COLONY STIMULATING FACTOR (CSF) UNITS

THIS PROGRAM CALCULATES CSF UNITS OF 24 HOURS DIURESIS, (INHUMAN URIN). REQUIRED DATA: CONCENTRATION FACTOR, ALFA VALUE OF STANDARD PREPARATION, STANDARD UNITS, - DIURESIS AND ALFA VALUE OF UNKNOWN CONCENTRATE.SUITABLE FOR HP-97,TOO.

059PROGRAM STEPS
MAURO FELLA
I - GENOVA

60240D 67-RHUMB-LINE NAVIGATION

PROGRAM COMPUTES:
1. NEW POSITION IN FUNCTION OF

60240D (CONTD)

STARTING AND ARRIVAL TIMES-TRUE TRACK - GROUND SPEED.
2. TRUE TRACK AND RHUMB LINE DISTANCE BETWEEN TWO KNOWN POSITIONS - LEG TIME AND TOTAL TIME IN FUNCTION OF TRUE AIRSPEED - WIND.

221PROGRAM STEPS
PIERRE TALMANT
F - PARIS

60241D 97-RESECTION II - ERRORS IN COORDINATED POSITION OF RESECTION

THE PROGRAM RUNS ON FROM PROGRAM 51210 D-97 BY TAKING THE CO-ORDINATED POSITION COMPUTED FOR THE RESECTION AND EVALUATING THE RADIUS OF THE ERROR CIRCLE EITHER USING THE STANDARD ERROR VALUES BUILT INTO THE PROGRAM OR USER SPECIFIED VALUES FOR THE POSITION MARKS AND RESECTED ANGLES.

220PROGRAM STEPS
MIKE STEPHENSON
UK - HULL

60242D 67-CHEMICAL ELEMENTS II

CHEMICAL ELEMENTS II IS A COMPLEMENT OF CHEMICAL ELEMENTS I. YOU CAN WITH THE FIRST PROGRAM FIND THE NAME OF A CHEMICAL ELEMENT WITH THE SYMBOL OF THIS ELEMENT AND VICE VERSA WITH THE SECOND PROGRAM.

224PROGRAM STEPS
JEAN REIBEL
F - FONTENAY AUX ROSES

60243D 97-STAR EQUATORIAL COORDINATES -VS EARTH PRECESSION

IF POSSIBLE, ADD THE FOLLOWING LAST LINE: OPTIONAL: STAR DATA INPUT BY CARD.

224PROGRAM STEPS
JEAN THIBERGE
F - CHERBOURG

60244D 67-ENGLISH (US) - SI CONVERSIONS

THIS PROGRAM CONVERTS 37 ENGLISH (US) MEASURES TO SI, OR REVERSE: LENGTH (4), AREA (5), VOLUME (4), CAPACITY (US:4; GB:4) FORCE (4), MASS (4), TEMPERATURE (2), PRESSURE (4), ENERGY (2).
NO MEMORY USED. OTHER CONVERSIONS MAY BE REALISED.

223PROGRAM STEPS
JEAN THIBERGE
F - CHERBOURG

60245D 67-TIC TAC TOE

YOU CAN PLAY TIC-TAC-TOE WITH HP-67 YOU MAY DO THE FIRST MOVE, BUT ALSO HP MAY DO THE FIRST MOVE; HP NEVER LOOSES; HP DOES A DIRECT WINNING MOVE BEFORE A DEFENSIVE ONE ; IF HP MOVES FIRST, HP WINS EVERY GAME THAT SHOULD BE WON.
HPS "THINKING-TIME" ;IS 35 SECONDS. A SECOND, FASTER PROGRAM OF 20 SECONDS, OVERLOOKS ONE CHANCE TO WIN.

217PROGRAM STEPS
HANS AUSEMS
NL - BREDA

60246D 67-BASE TRANSFORMATION AND ARITHMETIC

REAL NUMBERS, ALSO THE NEGATIVES AND THE NONINTEGERS, CAN BE TRANSFORMED FROM BASE A TO BASE B (2<=A,B<=100), AND IN EACH BASE CAN BE OPERATED WITH THE FIVE FUNCTIONS +,-,X,/,YXP(X). FOR BEST EXACTNESS NO LOG-FUNCTION IS USED IN ALGORITHM. PROGRAM NEEDS NO MANUAL

60246D (CONTD)

INTERFERENCE BETWEEN START AND END.

224PROGRAM STEPS
HANS AUSEMS
NL - BREDA

60247D 67-TEST OF MIND

HP BECOMES A MIND-TESTER. A RANDOM NUMBER GENERATOR FORMS NUMBERS BETWEEN 0 AND 16 YOU HAVE TO NOTICE. AFTER 1 UP TO 7 REPETITIONS YOU HAVE TO USE KEYBOARD. ACCORDING TO DIFFICULTY YOU GET POINTS AND IF WRONG, THEY ARE OF COURSE NEGATIVE.

123PROGRAM STEPS
FRANZ KIEBELE
D - REUTLINGEN

60248D 67-HANGMATH

THE PROGRAM GENERATES RANDOMLY A MULTIPLICATION GRID. IT MULTIPLIES A 3 DIGITS NUMBER BY A 2 DIGITS ONE. YOU MUST FIND THESE NUMBERS, THE RESULT,EVERY DIGIT OF THE GRID. YOU MUST NOT MAKE TOO MANY TRIES. SO YOU MUST USE A STRATEGY LIKE FOR THE MASTERMIND. MACHINE KEEPS SCORE MISTAKES, NUMBERS FOUND AND GIVES YOU A MEAN MARK FOR ALL YOUR GAMES.

221PROGRAM STEPS
JEAN-PIERRE FAISAN
F - PARIS

60249D 97-ELECTORAL COMPUTATION BY D'HONT'S LAW

DURING ELECTIONS, KNOWING THE NUMBER OF PARLIAMENT SEATS AVAILABLE AND THE VOTES SCRUTINIZED BY EACH PARTY, IT IS DESIRED TO DISTRIBUTE SAID PARLIAMENT SEATS AMONG THE DIFFERENT PARTIES ACCORDING TO D'HONT'S LAW.

146PROGRAM STEPS
ANTONIO JIMENEZ-ARANA
E - MADRID

60250D 67-STABILITY OF SUSPENSIONS OF MEASLES VIRUS

PROGRAM QUANTITATIVELY PREDICTS EXPIRATION DATES OF VITAMIN PREPARATIONS STORED AT ROOM TEMPERATURES IF THE RESULTS OF SHORT-TERM DEGRADATION STUDIES AT ELEVATED TEMPERTURES ARE GIVEN.

223PROGRAM STEPS
BRANKO SPOLJARIC
JU - ZAGREB

60251D 67-SPECIAL CURVE FITTING A

IT IS IMPOSSIBLE TO SOLVE A CURVE FIT OF THE TYPE Y=A-BE**CX WITH THE SYSTEM OF THE LEAST-SQUARES APPROXIMATION, BUT THIS PROGRAM IS A TRY TO SOLVE THIS PROBLEM WITH A CERTAIN SATISFACTION.

141PROGRAM STEPS
JOHN VAN THIELEN
B - STABROEK

60252D 67-A SPECIAL CURVE FIT B

GIVEN N POINTS WITH THEIR COORDINATES (X,Y), THIS PROGRAM COMPUTES IN ONE OF THIS POINTS (XB,YB) THE ANGLE ALPHA OF THE BEST LINE THROUGH THIS POINT.

028PROGRAM STEPS
JOHN VAN THIELEN
B - STABROEK

60253D 67-A SPECIAL CURVE FIT C

GIVEN N POINTS WITH THEIR COORDINATES (X,Y) THIS PROGRAM COMPUTES THE BEST LINE THROUGH THOSE POINTS

60253D (CONTD)

IN THE CENTER OF GRAVITY UNDER AN ANGLE ALPHA.

030PROGRAM STEPS
JOHN VAN THIELEN
B - STABROEK

60254D 67-A SPECIAL CURVE FIT D

GIVEN N POINTS WITH THEIR COORDINATES (XN,YN) (NMAX=9) THIS PROGRAM COMPUTES IN ONE OF THESE POINTS (XB,YB) THE ANGLE ALPHA OF THE BEST LINE THROUGH THIS POINT.

095PROGRAM STEPS
JOHN VAN THIELEN
B - STABROEK

60255D 67-THE FIRST FIVE DIFFERENTIAL-QUOTIENTS

PROGRAM USES THE MIDPOINT RULE WITH AN EXTRA CORRECTION FOR THE FIRST THREE DIFFERENTIAL QUOTIENTS.
FOR THE FIFTH DIFFERENTIAL QUOTIENT THERE ARE 37 PROGRAM STEPS AVAILABLE FOR THE FUNCTION.

196PROGRAM STEPS
HANS AUSEMS
NL - BREDA

60256D 67-LENGTH, AREA, VOLUME

THIS PROGRAM COMPUTES AT A GIVEN FUNCTION (47 PROGRAM STEPS AVAILABLE):
THE LENGTH OF THE GRAPH
THE AREA BETWEEN GRAPH AND X-AXIS
THE VOLUME OF REVOLUTION WHEN GRAPH IS ROTATED ABOUT THE X-AXIS

176PROGRAM STEPS
HANS AUSEMS
NL - BREDA

60257D 67-ERRORS ON F'(A)

THIS PROGRAM CAN HELP YOU CALCULATE THE BEST APPROXIMATION OF THE FIRST DERIVATE F'(A), PROVIDED THAT YOU CAN ESTIMATE THE THIRD (OR BETTER THE FIFTH) DERIVATE. PROGRAM SHOWS ALSO THE TRUNCATION ERRORS AND THE ROUNDING-OFF ERRORS. THERE ARE 40 PROGRAM STEPS LEFT FOR THE FUNCTION.

183PROGRAM STEPS
HANS AUSEMS
NL - BREDA

60258D 67-INTEGRATION BY PARABOLA FOR MULA

THE PROGRAM SOLVES GIVEN INTEGRALS BY THE PARABOLA FORMULA WITH A GIVEN PRECISION.

112PROGRAM STEPS
WOLFGANG HAUSCH
D - DARMSTADT

60259D 97-BALANCE OF FLEXIBLE WORKING HOURS (FWH)

SOME SYSTEMS OF REGISTRATION OF FLEXIBLE WORKING HOURS (FWH) ARE TELLING ONLY ONCE (AT THE END OF A MONTH) THE BALANCE OF YOUR INDIVIDUAL FWH. THIS PROGRAM STRIKES THE DAILY BALANCE. IT ALSO TELLS THE END OF THE DAILY WORKTIME WITH A GIVEN CORRECTION OF THE BALANCE OR THE DRIFT OF THE BALANCE WITH AN ESTIMATED END (BOTH WITHOUT CHANGE IN THE ACTUAL MONTHLY BALANCE)

112PROGRAM STEPS
MARTIN H SCHERRER
CH - MAENNEDORF

60260D 67-MIXT SECTION PROPERTIES

THE PROGRAM WILL PROVIDE ALL

60260D (CONTD)

USEFUL PROPERTIES SUCH AS INERTIA OR GRAVITY CENTRE OF A MIXT (CONCRETE-STEEL) SECTION.

205PROGRAM STEPS
STELIO VOYATZOPOULOS
GR - ATHENS

60261D 67-FUNCTIONS OF THE LAVAL NUMBER

THE PROGRAM IS USED TO COMPUTE SEVERAL FUNCTIONS OF THE LAVAL NUMBER (I.E. THE CRITICAL MACH-NUMBER) SUCH AS THE RELATIONS PRESSURE TO TOTAL PRESSURE, TEMPERATURE TO TOTAL TEMPERATURE, DENSITY TO TOTAL DENSITY AND THE MACH NUMBER.

068PROGRAM STEPS
DETLEF R SCHMITT
D - OTTOBRUNN

60262D 67-ERRORS ON INTEGRATION

THIS PROGRAM COMPUTES AN INTEGRAL IN N DOUBLE SIMPSON STEPS AND GIVES ALSO A CORRECTION TO MAKE THAT ANSWER MORE ACCURATE. IN THE SECOND PART OF THIS PROGRAM YOU KEY IN ON THE BEFOREHAND THE DESIRED ACCURACY AND PROGRAM WILL DECIDE NUMBER AND VARIABLE WIDTH OF THE SIMPSON STEPS. AN ACCURACY OF 10**-8 CAN BE OBTAINED.

160PROGRAM STEPS
HANS AUSEMS
NL - BREDA

60263D 67-EQUATION OF STATE I

BASIC THING IN MECHANICALL DESIGN OF AN OVERHEAD TRANSMISSION LINES IS EQUATION OF STATE, WITH KNOWN FIRST SIZES WE CAN CALCULATE ANY STATE OF TRANSMISSION LINES. THIS PROGRAM CALCULATES SIZES OF BASIC STATE. THIS IS CRITICAL SPAN AND CRITICAL TEMPERATURE.

200PROGRAM STEPS
VELIMIR ILIJANIC
YU - ZAGREB

60264D 67-EQUATION OF STATE 2

THIS PROGRAM SOLVES EQUATION OF STATE. WITH PROGRAM "EQUATION OF STATE 1" YOU ORDER BASIC STATE, AND OUTPUT DATA FROM THIS PROGRAM IS INPUT DATA IN PROGRAM "EQUATION OF STATE 2". WHEN YOU GET TENSION YOU CAN CALCULATE MIDSPAN SAG, AND SAG AT ANY PLACE IN THE SPAN FOR THIS TENSION.

195PROGRAM STEPS
VELIMIR ILIJANIC
JU - ZAGREB

60265D 67-FISHERIAN DISCRIMINATION -5 VARIABLES

STARTING FROM THE OBSERVATIONS MADE THE PROGRAM CALCULATES AND PUTS IN MATRICIAL FORM,THE NECESSARY INPUTS FOR ENTERING IN PROGRAM 5X5 MATRIX OPERATIONS WITH SYMMETR. COEFFIC. (50234D).IT ALSO CALCUL. AND SETS IN THE PROPER REGISTERS,THE ELEMENT OF COLUMN R IN THE SAID PROGR. IN SUCH A MANNER THAT LOADING THE CORRESPONDING CARDS, THE USER OBTAINS, WITHOUT TRANSCRIPTION THE COEFF. OF THE DISCRIMINATION FUNCTION.A CODED SCALE IS SUPPLIED TO ENTER PROGR. SUCH DATA AS THE PRESENCE/ABSENCE OF(EG=SYMPTON).ANSW."I DOUBT"=CODED

335PROGRAM STEPS
GUY RABELLE
F - BEAUVAIS

60266D 67-COMPLEX OPERATIONS

THIS PROGRAM MAKES IT POSSIBLE TO

60266D (CONTD)

OPERATE WITH COMPLEX NUMBERS JUST AS EASY AS ORDINARY NUMBERS OPERATES WITH A PROTECTED STACK OF 4 COMPLEX NUMBERS FUNCIONS ARE; ENTER SUM AND PROD., X*Y,Y/X, X+Y, Y-X,CLX,LST ENTER 1) X,Y**X, X EXCHNAGE Y, ROLL DOWN AND STO AND RCL 5 COMPLEX REGISTERS. SPECIAL CIRCUITS FUNCTION ARE X PARALLEL TO Y, W AND F INPUT FOR COMPUTING THE COMPLEX IMPEDANS OF CAPACITORS AND SPOOLS.

224PROGRAM STEPS
KNUDSEN PREBEN VAGN
DK - GRAASTEN

60267D 67-BOEING-707 FUEL-CALCULATION P&W-JT3D-3B ENGINES

THE PROGRAM CALCULATES THE CLIMB-FUEL, CRUISE- AND DESCENT-FUEL OF A BOEING 707 B/C AIRCRAFT (P&W-JT 3D-3B ENGINES INSTALLED). PARAMETERS ARE:MACHNUMBER (M.80/82), GROSS-WEIGHT, FLIGHT-LEVEL, TRACK, WIND-DIRECTION AND VELOCITY, DISTANCE OF FLIGHT-SEGMENTS. STEP-CLIMBS ARE POSSIBLE, AND STEP-CLIMB FUEL IS AUTOMATICALLY CONSIDERED. - INTEGRATED-RANGE-METHOD IS USED.

224PROGRAM STEPS
MARTIN BLUME
D - SUNDERN

60268D 67-INS-CHECK BY VOR-DME

THE PROGRAM ENABLES A PILOT TO CHECK THE ACCURACY OF THE AIRCRAFTS INERTIAL-NAVIGATION-SYSTEMS BY A VOR/DME-STATION. ON THE BASIS OF THE LATITUDE, LONGITUDE, VARIATION OF A VOR-STATION AND RADIAL- AND DME-READING CALCULATES THE PROGRAM THE PRESENT POSITION OF THE AIRCRAFT (GC-METHOD). THEREAFTER THE INS-INDICATION CAN BE CHECKED AGAINST THE ACTUAL PRESENT POSITION THE ERROR IS INDICATED IN NAUTICAL MILES.

123PROGRAM STEPS
MARTIN BLUME
D - SUNDERN

60269D 67-VALVE FLOWCOEFFICIENT FOR MASONEILAN CONTROL VALVES

THIS PROGRAM CALCULATES THE VALVE FLOWCOEFFICIENT-CV- FOR MASONEILAN CONTROL VALVES (LIQUID,GAS OR STEAM SERVICE). THE USED FORMULAS ALSO APPLY TO OTHER TYPES, AS LONG AS THE CRITICAL FLOW FACTOR OF (PRESSURE RECOVERY RATIO) CAN BE DETERMINED.

371PROGRAM STEPS
ROBERT E V KOENE
NL - LISSE

60270D 67-RHUMBLINES AND POSITIONS

PROGRAM COMPUTES THE D.R. POSITION FROM INPUT:START POSITION AND ONE OR MORE LEGS. IT ALSO COMPUTES COURSE AND DISTANCE FROM D.R. TO FIX AND THE RHUMBLINE FROM START TO FIX. COURSES MAY GO DUE E OR DUE W OR ACROSS THE DATE LINE.

195PROGRAM STEPS
WILLEM BRUNINGS
NL - BILTHOVEN

60271D 67-ATOM-B OR VALENCES COMPOSITION FROM USUAL ROUTINE DATAS

DATAS RELATIVE TO MAJOR ELEMENTS (TILL 20) - OXYDES PERCENT KNOWN - BEING PREVIOUSLY COMPUTED (B) AND STORED IN PRIMARY REGISTERS - DATAS RELATIVE TO MINOR OR OLIGO ELEMENTS (TILL 20) BEING PREVIOUSLY STORED IN SECONDARY REGISTERS ATOMIC MASSES - (C) , OF ATOM-G AND VALENCES IN A ROCK-KG.

60271D (CONTD)

(C) COMPUTES FROM PREADMITTED ELEMENT NUMBER AND PPM, NUMBERS OF MILLI ATOM-G IN A ROCK-KG. FOR STRUCTURAL OR STATISTICAL PROBLEMS.

149PROGRAM STEPS
ANDRE RIVIERE
F - BOURG-LA-REINE

60272D 67-SEXTANT CHECK BY STARS DISTANCE

CHECKS SEXTANT ACCURACY BY COMPUTING THE ERROR ON THE MESURE OF THE DISTANCE BETWEEN 2 KNOWN STARS.

095PROGRAM STEPS
MENZI ROBERT FREDERIC
CH - GENEVA

60273D 97-STRESS IN THE BARS OF A LATTICE GIRDER (PART 2)

THE PROGRAM DETERMINES THE BEAM LENGTHS AND FORCES IN ALL BARS OF A SYMMETRICAL LATTICE GIRDER WITH HORIZONTAL UPPER AND BOTTOM CHORD (THE NUMBER OF PANELS MAY BE UNLIMITED)) TWO LOAD CASES (DISTRIBUTED LOAD EITHER ON THE BOTTOM OR UPPER CHORD) ARE POSSIBLE. THE DIAGONAL BARS ARE DISIGNED AS TENSION MEMBERS.

121PROGRAM STEPS
CLAUS M DACHSELT
D - WITTEN-ANNEN

60274D 67-PROBABILITY CURVE FIT C

GIVEN N DATA-PAIRS (XN,YN) THIS PROGRAM COMPUTES THE BEST PROBABILITY CURVE AND TO CONTROL, THE T OF STUDENT.

079PROGRAM STEPS
JOHN VAN THIELEN
B - STABROEK

60275D 67-CUSPIDS AND DIVISION HOUSES -CAMPANUS REGIO AND PLACIDE

THIS PROGRAM GIVES THE POSSIBILITY BY A NEW METHOD TO OBTAIN WITH 154 STEPS, THE CUSPIDS AND DIVISION HOUSES FOR CAMPANUS, REGIO, PLACIDE WITH LONGITUDE, DIRECTIONNAL POLE, RECTA ASCENSION, AND DECLINATION. THE ERROR FOR ALL RESULTS IS MINUS THAT ONE SECOND ARE.

154PROGRAM STEPS
JACQUES SUQUET
F - BANYULS

60276D 97-DIFFERENTIAL EQUATIONS HIGH PRECISION POLY-EXTRAPOLATION

PROGRAM SOLVES WITH A HIGH DEGREE OF PRECISION INITIAL VALUE PROBLEMS FOR ORDINARY DIFFERENTAIL EQUATIONS OF THE FIRST ORDER. GRAGG'S RULE, A STABILIZIED VERSION OF THE MIDPOINT RULE, IS APPLIED FOR INTEGRATION. POLYNOMIAL FUNCS.,ARE THEN USED FOR LOCAL EXTRAPL.;AN AUTOMATIC CONTROL ADAPTS THE LENGHT OF THE INTEGR. SUBINTERVALS TO THE LOCAL BEHAVIOUR OF THE FUNCT. -THE EXTRPL. METHOD IS SUPERIOR TO OTHER METHODS (RUNGE KUTTA, PREDICTOR-CORRECTOR ETC) AND ESPECIALLY SUITED FOR DIFFICULT PROBLEMS. (GRAGG-BULIRSCH-STOER)

181PROGRAM STEPS
PETER LUSCHNY
D - MUNICH

60277D 97-DIFFERENTIAL EQUATIONS HIGH PRECISION RATIO-EXTRA POLATION

PROGRAM SOLVES WITH A HIGH DEGREE OF PRECISION INITIAL VALUE PROBLEMS FOR ORDINARY DIFFERENTIAL EQUATIONS OF THE FIRST ORDER. GRAGG'S RULE, A STABILIEZED VERSION OF THE MIDPOINT RULE, IS APPLIED FOR INTEGRATION.

60277D (CONTD)

RATIONAL FUNCTIONS ARE THEN USED FOR LOCAL EXTRAPOL.- AN AUTOMATIC CONTROL ADAPTS THE LENGTH OF THE INTEGR. SUBINTERVALS TO THE LOCAL BEHAVIOUR OF THE FUNCT.;THE EXTRAP. METHOD IS SUPERIOR TO OTHER METHODS (RUNGE-KUTTA,PREDICTOR-CORRECTOR) AND ESPECIALLY SUITED FOR DIFFICULT PROBLEMS. (GRAGG-BULIRSCH-STOER)

181PROGRAM STEPS
PETER LUSCHNY
D - MUNICH

60278D 67-PARALLEL R-L & R-C

GIVEN SUPPLY FREQUENCY 'F' AND ANY 2 PAIRS OF L-R1, C-R2 OR Z<0 DEGREE THE OTHER PAIR MAY BE CALCULATED. OBTAINS 'Q' FACTOR (DEFINED) AND RESONANT FREQUENCY F0, WITH INDICATION OF NON-RESONANT CIRCUIT OR CIRCUIT RESONANT AT ALL FREQUENCIES. OBTAINS IMPEDANCE AND PHASE ANGLE FOR EACH BRANCH,XL & XC. OBTAINS BRANCH & TOTAL CURRENTS GIVEN VOLTAGE & PHASE ANGLE OR OBTAINS COMPONENT & SUPPLY VOLTAGES GIVEN TOTAL CURRENT & PHASE ANGLE, OR VISAVERSA.

224PROGRAM STEPS
LAWRENCE B HARTLEY
UK - BRIERFIELD

60279D 97-NUMBER OF DIGITS (SUBROUTINE)

PROGRAM DEETERMINES THE NUMBER OF DIGITS IN THE DISPLAY. IT CAN BE USED AS SUBROUTINE IN SEVERAL OTHER PROGRAMS.

030PROGRAM STEPS
MICHAEL TARNOWSKI
D - WIESBADEN

60280D 67-GAUSSIAN TRANSFORMATION

AFTER INPUT OF N DATA-PAIRS (X,Y) THIS PROGRAM COMPUTES THE Y MAX (X=0) OF THE GAUSSIAN DISTRIBUTION CURVE. YOU CAN ALSO COMPUTE EXPECTED Y'S FOR GIVEN X'S TO MAKE A SKETCH.

112PROGRAM STEPS
JOHN VAN THIELEN
B - STABROEK

60281D 67-PROBABILITY CURVE FIT B

GIVEN N DATA-PAIRS (X,Y) THIS PROGRAM COMPUTES THE MEAN M AND THE STANDARD DEVIATION T OF THE GAUSSIAN PROBABILITY CURVE FIT. THEN YOU CAN COMPUTE Y'S FOR GIVEN X'S TO MAKE THE BEST CURVE.

057PROGRAM STEPS
JOHN VAN THIELEN
B - STABROEK

60282D 67-SPECIAL CURVE FIT E

GIVEN N-POINTS WITH THEIR COORDINATES (XN,YN) (N MAX=9), THIS PROGRAM COMPUTES IN ONE OF THE POINTS (XN,YN) THE ANGLE ALPHA OF THE BEST LINE THROUGH THIS POINT. A SPECIAL LEAST SQUARES METHOD IS USED.

093PROGRAM STEPS
JOHN VAN THIELEN
B - STABROEK

60283D 67-JULIAN,GREGORIAN, COPTIC, FRENCH MUSLIM CAL. EASTER.

A COMMON HALF-CARD PROGRAM (JULIAN GREGORIAN) IS ASSOCIATED WITH THREE POSSIBLE SECOND HALVES OF PROGRAM: -EASTER,ASCENSION,WHITSUNDAY-COPTIC AND FRENCH - MUSLIM - TO COMPUTE JULIAN/GREGORIAN DATE OF (OR RELATIVE TO) EASTER; CONVERT DATES FROM ANY CALENDAR INTO ANOTHER AND

60283D (CONTD)

GIVE DAY OF WEEK;COMPUTE DIFFERENCE OF DAYS BETWEEN TWO DATES GIVEN IN ANY CALENDAR; GIVEN DIFFERENCE OF DAYS RELATIVELY TO A DATE, COMPUTE DATE IN ANY CALENDAR. NO DATA CARD REQUIRED.

440PROGRAM STEPS
JEAN THIBERGE
F - CHERBOURG

60284D 67-SPECIFIC HEAT RATIO OF REAL GASES

THE PROGRAM DETERMINES THE SPECIFIC HEAT RATIO OF REAL GASES FROM PROPERTIES (CRITICAL PRESSURE AND TEMPERATURE, AND HEAT CAPACITY AT CONSTANT PRESSURE) MORE EASILY INCLUDED IN HANDBOOKS.

126PROGRAM STEPS
GIUSEPPE LIGATO
I - CUSANO MILANINO

60285D 67-NORMAL DISTRIBUTION CURVE

GIVEN N VALUES, THIS PROGRAM EXAMINATES IF THESE VALUES ARE NORMAL DISTRIBUTED. YOU CAN ALSO COMPUTE THE NORMAL VALUES, TO MAKE A SKETCH.

112PROGRAM STEPS
JOHN VAN THIELEN
B - STABROEK

60286D 67-AZIMUTH OF THE SUN (TIME AZIMUTH)

THIS PROGRAM CALCULATES THE AZIMUTH OF THE SUN. THE ADVANTAGE OF THIS PROGRAM IS, THAT ALL ASTRONOMICAL DATA CAN BE STORED FOR EACH MONTH ON ONE DATA CARD. IF ONCE ALL DATA (16 VALUES) ARE STORED ON THE DATA CARD, AN EPHEMERIS BOOK IS NO MORE NECESSARY!

214PROGRAM STEPS
FRANCOIS GAUFROID
CH - CHUR

60287D 67-AZIMUTH OF THE SUN -(ZENITH ANGLE AZIMUTH)

THIS PROGRAM CALCULATES THE AZIMUTH OF THE SUN. THE ADVANTAGE OF THIS PROGRAM IS, THAT ALL ASTRONOMICAL DATA CAN BE STORED FOR EACH MONTH ON ONE DATA CARD. IF ONCE ALL DATA (16 VALUES) ARE STORED ON THE DATA CARD, AN EPHEMERIS BOOK IS NO MORE NECESSARY.

224PROGRAM STEPS
FRANCOIS GAUFROID
CH - CHUR

60288D 67-PHASEMATCHING-ANGLE TYPE I

THE PROGRAM COMPUTES THE PHASE-MATCHING-ANGLE FOR FREQUENCY-MIXING IN NONLINEAR CRYSTALS LIKE KDP (=KH2PO4) OR ADP (=NH4H2PO4). INPUT CONDITION: 2 ORDINARY POLARIZED RAYS OF HIGH-INTENSITY-LIGHT OUTPUT CONDITION:SUM-FREQUENCY, EXTRAORDINARY POLARIZED.

223PROGRAM STEPS
WILHELM HILLER
D - KEMPTEN

60289D 97-PHASEMATCHING-ANGLE TYPE IIA

THE PROGRAM COMPUTES THE PHASE-MATCHING-ANGLE FOR FREQUENCY-MIXING IN NONLINEAR CRYSTALS LIKE KDP (=KH2PO4) OR ADP (=NH4H2PO4)
INPUT CONDITION:
ORDINARY POLARIZED VARIABLE WAVE-LENGTH (E.G. FLOURESCENCE)
EXTRAORDINARY POLARIZED FIXED WAVE-LENGTH (E.G. FUNDAMENTAL-WAVE OF A LASER)
OUTPUT CONDITION: SUM-FREQUENCY,

60289D (CONTD)

EXTRAORDINARY POLARIZED.

224PROGRAM STEPS
WILHELM HILLER
D - KEMPTEN

60290D 97-BRIDGE TOURNAMENT RESULTS

THIS PROGRAM WILL CALCULATE THE RESULTS OF A BRIDGE TOURNAMENT OF UP TO FORTY PAIRS (20 NORTH-SOUTH AND 20 EAST-WEST)

175PROGRAM STEPS
BART ONKENHOUT
E - JESUS POBRE POR GATA DE GORFOS

60291D 67-TRIDIMENSIONAL EQUATION OF SECOND DEGREE

IN SPITE OF DIFFICULTIES OF THIS THEME THE PROGRAM DESIRES TO SOLVE EVERY PROBLEM RELATED WITH THE TRIDIMENSIONAL GENERAL EQUATION OF SEACOND DEGREE.
EACH CASE GIVES AN ANSWER WITH ITS REDUCED EQUATION. PREVIOUSLY CENTRE DISPLAYS AND USER COULD SELECT THE CORRESPONDENT KEY OF "CENTRE", "OMEGA CENTRE", "INFINITE CENTRES" A CATALOG WITH LISTED CASES IS INCORPORATED.

224PROGRAM STEPS
FELIPE LANDA
E - CORDOBA

60292D 67-INVOICES COMPUTATION

THIS PROGRAM IS MADE FOR INVOICES COMPUTATION IN WHICH, DISCOUNT OR INCREASE IN PRICE AND VALUE ADDED TAX ARE TO BE APPLIED. IT GIVES THE AMOUNT OF: THE TAXABLE VALUE, THE TAX AND THE SUM OF THEM, FOR SINGLE ITEM, SINGLE INVOICES AND SERIES OF INVOICES. THE CALCULATION CAN BE INTERRUPTED AT ANY MOMENT AND THE CALCULATED DATA STORED ON THE SIDE 2 OF THE MAGNETIC CARD, TO BE USED LATER ON.

112PROGRAM STEPS
PAOLO PELLICIARDI
I - BOLOGNA

60293D 67-BUILDING SOCIETY MORTGAGE TABLES

PROGRAM IS A VARIANT OF SD-05A ARRANGED SO AS TO PERMIT THE RAPID EVALUATION OF THE EFFECTS OF REPAYMENT PERIOD AND INTEREST RATE ON THE MONTHLY REPAYMENTS AND TOTAL COST OF A MORTGAGE. BOTH NORMALISED DATA AND DATA REFERRED TO PARTICULAR VALUES OF PRINCIPAL CAN BE GENERATED IN TABULAR OR SINGLE RESULT FORM.

147PROGRAM STEPS
D T RANSOM
UK - CHISLEHURST

60294D 67 CHI SQUARE TEST OF SAMPLE AGAINST ESTIMATED NORMAL DIST.

PROGRAM TESTS THE HYPOTESIS: "THE SAMPLE CONSIDERED WAS TAKEN FROM A NORMAL DISTRIBUTED POPULATION". THE METHOD USED WAS INTRODUCED BY R.A. FISHER.GROUPED/UNGROUPED SAMPLEVALUES ARE ENTERED JUST AS EASY AS ONE WOULD A SAMPLE,SUBJECT TO MEAN & STAND. DEVIAT. CALCULATIONS ONLY. TO THE USER THE MULTISTEP TESTING PROCEDURE IS REDUCED TO A PUSH ON A BUTTON. ALL USES OF TABLES ARE ELIMINATED. OUTPUTS ARE:THE ESTIMATED MEAN & STAND. DEVIATION,THE DEGREES OF FREEDOM,THE CHI-SQUARE & PROBABILITY THAT HYPOTESIS IS NOT TRUE.

321PROGRAM STEPS
SOREN VIDEBEK
DK - STRUER

60295D 67-PACKED-TOWER DESIGN

60295D (CONTD)

PROGRAM (IN ENGLISH UNITS) PERMITS ACCURATE DETERMINATION OF PACKED-TOWER DIAMETER AND FLOODING RATES. THE TRIAL-AND-ERROR CALCULATIONS INVOLVED IN THE DESIGN, ARE SOLVED BY THE NEWTON-RAPHSON METHOD.

196PROGRAM STEPS
GIUSEPPE LIGATO
I - CUSANO MILANINO

60296D 67-FREE SETTLING TERMINAL VELOCITY OF PARTICLES

PROGRAM SOLVES THE FREE SETTLING TERMINAL VELOCITY OF SPHERICAL (OR EQUIVALENT) PARTICLES REPLACING THE ACTUAL LAW OF SEDIMENTATION WITH THE EQUATIONS OF THE STOKES-LAW,THE INTERMEDIATE-LAW AND THE NEWTON-LAW RANGE.

205PROGRAM STEPS
GIUSEPPE LIGATO
I - CUSANO MILANINO

60297D 67-ACID/BASE TITRATION CURVE -(1 OR 2 K)

GIVING THE USUAL DATA FOR A WEAK ACID/BASE (1 OR 2 K) SOLUTION, PROGRAM COMPUTES TITRATION CURVE WITH A STRONG BASE (ACID) OF GIVEN CONCENTRATION: UNUSUALLY, PROGRAM CALCULATES V (VOLUME OF TITRANT TO BE ADDED) IN FUNCTION OF PH OF THE SOLUTION, USING A FORMULA DERIVATED BY THE CLASSIC EQUATIONS OF VERY HIGH DEGREE AND OF VERY LONG ELABORATION BY ITERATION SYSTEM. PROGRAM CALCULATES ALSO PH AT THE EQUIVALENT POINT(S). IT IS A VERY SPEEDY PROGRAM AND EASY TO USE.

217PROGRAM STEPS
CLAUDIO VIGHI
I - BOLOGNA

60298D 67-COEFFICIENT AUTOCORRELATION

PROGRAM COMPUTES COEFFICIENT AUTOCORRELATION R(T) FOR FIXED T, OR EXAMINES EXISTANCE OF T, DIFFERENT FROM ZERO OR M,FOR WHICH IS R(T)=1M IS BIT NUMBER IN BINARY SEQUENCE.

171PROGRAM STEPS
BROZOVIC VLADIMIR
YU - ZAGREB

60299D 67-SINKING SUBMARINES

EACH, YOU AND THE CALCULATOR HIDE 15 SUBMARINES ON A 10X10 GRID. THE SUBMARINES MUST NOT TOUCH ONE ANOTHER.THEN YOU AND THE CALCULATOR SHOOT ALTERNATIVELY. THE ONE WHO HAS SHOT ALL SUBMARINES AT FIRST, HAS WON.

216PROGRAM STEPS
STEFAN TROEK
D - PFORZHEIM

60300D 67-NUMERICAL INTEGRATION

PROGRAM CALCULATES THE AREA IN AN INTERVALL BY TRAPEZIUM-, MIDDLE POINT-, AND SIMPSON'S RULE.

086PROGRAM STEPS
STEFAN TROEK
D - PFORZHEIM

60301D 67-FAST PRIME TESTER

PUT IN ANY NUMBER AND YOU CAN CALCULATE WHETHER IT IS A PRIME OR NOT ONE DATA-CARD IS USED TO STORE MANY PRIMES (UP TO 641), SO CALCULATION TIME IS VERY SHORT. PROGRAM CAN ALSO BE USED TO FACTORIZE A NUMBER.

224PROGRAM STEPS
STEFAN TROEK

60301D (CONTD)

D - PFORZHEIM

60302D 67-DECIMAL TO FRACTION

THIS PROGRAM CHANGES A RECURRING DECIMAL INTO A FRACTION.MOREOVER IT CAN CALCULATE THE GREATEST COMMON DIVISOR OF TWO NUMBERS AND SIMPLIFY A FRACTION.

094PROGRAM STEPS
STEFAN TROEK
D - PFORZHEIM

60303D 67-PAIRS OF PRIMES

PROGRAM FINDS ALL PAIRS OF PRIMES IN A GIVEN INTERVAL BY TESTING BOTH NUMBERS OF THE PAIR AT THE SAME TIME. PRINT-OR R/S-MODE.

086PROGRAM STEPS
STEFAN TROEK
D - PFORZHEIM

60304D 67-GIANT-MASTER-MIND

CHOOSE YOUR OWN DEGREE FROM 1 UP TO 9 ROWS OF DIGITS - HP COMPUTES ITS OWN RANDOM CODE - PROPOSE YOUR GUESS - HP ANSWERS HOW MANY DIGITS ARE IN THE RIGHT PLACE (BLACK PEGS) AND IN THE WRONG ONE (WHITE PEGS) - HP DO NOT ACCEPT MORE DIGITS THAN THE NUMBER OF ROWS INITIALLY SELECTED.

166PROGRAM STEPS
FOURNERAT ANDRE
F - YERRES

60305D 67-LENS PARAMETERS SHARP DISTANCES IN FRONT AND BEHIND

THE PROGRAM COMPUTES FOR A LENS WITH FOCAL LENGHT F THE PARAMETERS: FOCAL DISTANCE UI, APERATURE NUMERAL F; AREA IN FRONT UA, AREA BEHIND VB, GIVEN THE FIRST TWO PARAMETERS OR THE LAST TWO. IT ALSO COMPUTES HYPERFOCAL DISTANCE H AND THE REPRODUCTION RATIO L FOR A GIVEN UI.

212PROGRAM STEPS
WILLEM BRUNINGS
NL - BILTHOVEN

60306D 67-CALENDAR-AGE FOR PSYCHOLOGICAL TESTS

THE PROGRAM COMPUTES THE CALENDAR-AGE OF A SUBJECT FROM DATE OF THE TEST AND THE DATE OF BIRTH. WHEN TESTING A GROUP (OF CHILDREN I.E.) THE MEAN AGE AND STANDARD DEVIATION CAN BE COMPUTED. APPLICATIONS: WISC, FROSTIG ETC "AFTER TEST" WORK IS SPEEDED UP WITHOUT CHANGE FOR ANNOYING AND TIRING ERRORS.

088PROGRAM STEPS
WILLEM BRUNINGS
NL - BILTHOVEN

60307D 67-GAMMA INVERSE UNDER FORMULA OF JOHNSTON

THE PROGRAM COMPUTES THE INVERSE OF A GIVEN GAMMA FUNCTION INTEGRAL USING JOHNSTON'S APPROXIMATION.

200PROGRAM STEPS
ELIO M VENTURA
F - PARIS

60308D 67-TIME BY LUNAR DISTANCE

COMPUTES THE TIME AT SEA, WITHOUT KNOWLEDGE OF THE EXACT POSITION, FROM THE DISTANCE BETWEEN THE MOON AND A CELESTIAL BODY.

167PROGRAM STEPS
ROBERT FREDERIC MENZI

60308D (CONTD)

CH - GENEVA

60309D 67-SOLUBILITY OF INORGANIC GASES IN PETROLEUM LIQUIDS

THE PROGRAM ESTIMATES THE SOLUBILITY OF INORGANIC GASES IN PETROLEUM LIQUIDS, AS PER ASTM (AMERICAN SOCIETY OF TESTING AND MATERIALS) STANDARD D 2779-69

190PROGRAM STEPS
GIUSEPPE LIGATO
I - CUSANO MILANINO

60310D 67-GENERAL NORMAL DISTRIBUTION

GIVEN A POPULATION N, THIS PROGRAM COMPUTES ALL NECESSARY DATA TO SKETCH THE NORMAL DISTRIBUTION, ACCORDING TO THIS POPULATION AND FURTHERMORE X**2, TO EXAMINE IF THE SAMPLE IS NORMAL DISTRIBUTED OR NOT

149PROGRAM STEPS
JOHN VAN THIELEN
B - STABROEK

60311D 67-PSEUDO-LINEAR PROGRAMMING

GIVEN THREE INEQUALITIES WITH THREE UNKNOWNS, THE UNIT-PRICE AND SALES-PRICE PER UNIT, THIS PROGRAM COMPUTES THE NUMBER OF EACH UNIT WITH AN ACCEPTABLE APPROXIMATION.

158PROGRAM STEPS
JOHN VAN THIELEN
B - STABROEK

60312D 97-THRUST TO A RETAINING WALL

PROGRAM CALCULATES THE RESPECTIVE STRAINES OF STRATA OF GROUND. THE NUMBER OF STRATA AND THE REFERENCE NUMBERS OF EACH STRATUM ARE VARIABLE.

115PROGRAM STEPS
GERHARD KRIZSANITS
A - LEOBERSDORF

60313D 97-ARITHMETIC AND GEOMETRIC MEAN

PROGRAM CALCULATES FOR INPUT DATA THE ARITHMETIC OR GEOMETRIC MEAN.

065PROGRAM STEPS
MICHAEL TARNOWSKI
D - WIESBADEN

60314D 97-PHASEMATCHING-ANGLE TYPE IIB

THE PROGRAM COMPUTES THE PHASE-MATCHING-ANGLE FOR FREQUENCY-MIXING IN NONLINEAR CRYSTALS LIKE KDP (=KH2PO4) OR ADP (=NH4H2PO4). INPUT CONDITION:-ORDINARY POLARIZED FIXED WAVELENGTH (E.G. FUNDAMENTAL-WAVE OF A LASER)
-EXTRAORDINARY POLARIZED VARIABLE WAVELENGTH (E.G. FLOURESCENCE)
OUTPUT CONDITION: SUM-FREQUENCY, EXTRAORDINARY POLARIZED.

223PROGRAM STEPS
WILHELM HILLER
D - KEMPTEN

60315D 67-FOLLOWING-LEGS-OF-GREAT-CIRCLE-NAVIGATION

KNOWING TWO POINTS,GIVES: DISTANCE AND INITIAL TRUE TRACK (VERTEX COORDINATES NOT DISPLAYED, AVAILABLE IN R7 AND R8); LATITUDE OF A POINT KNOWN BY ITS DISTANCE FROM DEPARTURE OR ITS LONGITUDE; LONGITUDES OF TWO POINTS AT THE SAME LATITUDE; DISTANCE BETWEEN TWO KNOWN LONGITUDES OR LATITUDES; TRUE TRACK AT ANY INTERMEDIATE LONGITUDE.

223PROGRAM STEPS
ANDRE FOURNERAT
F - YERRES

60316D 67-REGRESSION WITH 5 EXOGENEOUS VAR. - NORMAL OR AUTOREGRESSIVE

PERFORMS MULTIPLE REGRESSIONS WITH 5 EXOGENEOUS VARIABLES, BY LEAST SQUARES METHOD - MEANS OF THE VARIABLES ARE WRITTEN IN THE PROGRAM, AND COMPUTATIONS DONE ARE SIMILAR TO THE ONES IN THE CASE OF 2,3, OR 4 EXOG. (PRGR 51317D). AS IN THIS PROGRAM, COMPLETE RESULTS OF THE REGRESSION ARE GIVEN, AND IT USES THE PROGRAM "5.5 MATRIX OP. WITH SYMMETRIC COEFFICIENTS" (50234D)

380PROGRAM STEPS
PHILIPPE BEAUGRAND
F - PARIS

60317D 67-FLAG TEST ROUTINE

THE PROGRAM TESTS THE STATUS OF EACH FLAG AND DISPLAYS +-P',+-1,+-2 OR +-3 CONSECUTIVELY IF F0,F1,F2 OR F3,RESPECTIVELY,IS SET (+) OR CLEAR (-). THE STATUS OF EACH FLAG IS NOT CHANGED, AND THE CONTENTS OF THE X, Y AND Z REGISTERS OF THE STACK ARE NOT AFFECTED, BY THE PROGRAM. THE ORIGINAL X CONTENTS ARE DISPLAYED AT THE END.

028PROGRAM STEPS
A P STORACE
M - MSIDA

60318D 67-LINEAR REGRESSION

PROGRAM DESIGNED FOR USE WITH METHOD OF STANDARD ADDITIONS. IT DERIVES THE BEST STRAIGHT LINE THROUGH A SET OF DATA POINTS AND THE BLANK-CORRECTED INTERCEPT ON THE X (CONCENTRATION) AXIS. REGRESSION LINE THEN USED SO THAT FROM FURTHER VALUES OF Y (ABSORBANCE), BLANK-CORRECTED X CAN BE OBTAINED. STANDARD ERRORS IN X (AND CONFIDENCE LIMITS FOR UP TO EIGHT DEGREES OF FREEDOM) ALSO CALCULATED. INCORRECT PROGRAM SEQUENCE INDICATED BY FLASHING CODE NUMBERS.

213PROGRAM STEPS
A P STORACE
M - MSIDA

60319D 97-TWOPORT SCATTERING - TO IMPEDANCE - MATRIX CONVERSION

THIS PROGRAM PROVIDES CONVERSION OF A TWOPORT SCATTERING MATRIX S TO ITS EQUIVALENT NORMALIZED AND DENORMALIZED IMPEDANCE MATRICES Z' AND Z. CONVENIENT INPUT AND OUTPUT PROCEDURES ARE AVAILABLE AND SEVERAL SAFEGUARDS PREVENT HANDLING ERRORS. THE PROGRAM IS INDEPENDENT OF ITS COMPANION CONVERSION PROGRAMS BUT IT FEATURES COMMON HANDLING PRINCIPLES AND CAN EXCHANGE DATA CARDS WITH THEM.

224PROGRAM STEPS
GEORGE W EPPRECHT
CH - ZURICH

60320D 97-TWOPORT IMPEDANCE - TO SCATTERING - MATRIX CONVERSION

THIS PROGRAM PROVIDES NORMALIZATION OF A TWOPORT IMPEDANCE MATRIX Z TO ITS NORMALIZED FORM Z' (USING EQUAL OR DIFFERENT REAL REFERENCE IMPEDANCES) AND CONVERTS IT TO THE TOWPORT SCATTERING MATRIX S. CONVENIENT INPUT AND OUTPUT PROCEDURES ARE AVAILABLE. SEVERAL SAFEGUARDS PREVENT HANDLING ERRORS. ALTHOUGH THE PROGRAM IS INDEPENDENT OF ITS COMPANION CONVERSION PROGRAMS, IT FEATURES SIMILAR HANDLING PRINCIPLES AND CAN EXCHANGE DATA CARDS WITH THEM.

223PROGRAM STEPS
GEORGE W EPPRECHT
CH - ZURICH

60321D 97-TWOPORT TRANSFER - TO SCATTERING - MATRIX CONVERSION

THE PROGRAM PROVIDES CONVERSION BETWEEN TWOPORT SCATTERING-(S-) AND TRANSFER-(T-) MATRICES. IN ADDITION IT CALCULATES THE DETERMINANT OF A COMPLEX TWOPORT MATRIX. A CONVENIENT INPUT PROCEDURE IS INCORPORATED AND OUTPUT MAY BE CALLED IN THREE FORMS: RECTANGULAR, POLAR AND LOGARITHMIC (DB). THE PROGRAM IS INDEPENDENT OF ITS COMPANION PROGRAMS BUT FEATURES SIMILAR HANDLING PRINCIPLES AND CAN EXCHANGE DATA CARDS WITH THEM.

221PROGRAM STEPS
GEORGE W EPPRECHT
CH - ZURICH

60322D 67-RIGID FRAME -CALCULATION II

THIS PROGRAM FINDS OUT THE BENDING MOMENT DISTRIBUTION AND REACTIONS FOR FIXED SUPPORTS FRAMES UNDER THE FOLLOWING LOADING: UNIFORM LOAD ON THE LEFT COLUMN, ONE CONCENTRATED LOAD ON THE LEFT COLUMN AND UNIFORM HEATING. ALLOWING FOR DIFFERENT CROSS SECTIONS IN VERTICAL AND HORIZONTAL MEMBERS BUT HAVING THE SAME MATERIAL.

224PROGRAM STEPS
EDUARDO SALETE DIAZ
E - MADRID

60323D 67-BI-SLOPED FRAMES -CALCULATION I

FIND OUT THE REACTIONS AND BENDING MOMENT DISTRIBUTION OVER A SYMMETRIC FOUR-BARS FRAME WITH BOTH ENDS FIXED AND TWO DIFFERENT MOMENTS OF INERTIA. BEING LOADED UNIFORMLY ALONG THE SKEW BARS WITH VERTICAL LOAD.

200PROGRAM STEPS
EDUARDO SALETE DIAZ
E - MADRID

60324D 67-RIGID FRAME -CALCULATION III

FIND OUT THE REACTIONS AND BENDING MOMENTS DISTRIBUTION OVER A SYMMETRIC THREE-BARS FRAME WITH BOTH ENDS FIXED. ALLOWING FOR DIFFERENT CROSS SECTIONS IN VERTICAL AND HORIZONTAL MEMBERS BUT HAVING THE SAME MATERIAL. BEING LOADED AS FOLLOWS:
A-FIXED END HORIZONTAL DISPLACEMENT
B-FIXED END VERTICAL DISPLACEMENT
C-UNIFORM HEATING

108PROGRAM STEPS
EDUARDO SALETE DIAZ
E - MADRID

60325D 67-BI-SLOPED FRAMES -CALCULATION II

FIND OUT THE REACTIONS AND BENDING MOMENT DISTRUBUTION OVER A SYMMETRIC FOUR-BARS FRAME WITH BOTH ENDS FIXED AND TWO DIFFERENT MOMENTS OF INERTIA. BEING LOADED UNIFORMLY OVER THE LEFT COLUMN WITH HORIZONTAL LOAD.

224PROGRAM STEPS
EDUARDO SALETE DIAZ
E - MADRID

60326D 67-BI-SLOPED FRAMES -CALCULATION III

FIND OUT THE REACTIONS AND BENDING MOMENTS DISTRIBUTION OVER A SYMMETRIC FOUR-BARS FRAME WITH BOTH ENDS FIXED AND TWO DIFFERENT MOMENTS OF INERTIA. BEING LOADED UNIFORMLY ALONG LEFT SKEW BAR, WITH HORIZONTAL LOAD.

60326D (CONTD)

224PROGRAM STEPS
EDUARDO SALETE DIAZ
E - MADRID

60327D 67-BI-SLOPED FRAMES
-CALCULATION IV

FIND OUT THE REACTIONS AND BENDING MOMENT DISTRIBUTION OVER A SYMMETRIC FOUR-BARS FRAME WITH BOTH END FIXED AND TWO DIFFERENT MOMENTS OF INERTIA.BEING LOADED AS FOLLOWS:
A-FIXED END HORIZONTAL DISPLACEMENT
B-FIXED END VERTICAL DISPLACEMENT
C-UNIFORM HEATING

210PROGRAM STEPS
EDUARDO SALETE DIAZ
E - MADRID

60328D 67-PSEUDO LINEAR PROGRAMMING II

OUT OF A STOCK OF A REGISTORS, B TRANSISTORS, C CAPACITORS AND D CONNECTORS, YOU CAN PRODUCE FOUR TYPES OF PRINTED CIRCUITS WITH THE FOLLOWING PROFITS:TYPE I: P FR, TPPE II; Q FR; TYPE III: R FR; TYPE IV: S FR. IF TYPE I REQUIRES A REGISTORS; B, TRANSISTORS, C, CAPACITORS AND D, CONNECTORS, TYPE II A2,B2,C2,D2 TYPE III A3,B3, C3,D3 AND TYPE IV A4,B4,C4,D4; THIS PROGRAM COMPUTES THE NUMBER OF THE TYPE WHICH GIVES YOU THE MAXIMUM PROFIT AND THIS PROFIT.

106PROGRAM STEPS
JOHN VAN THIELEN
B - STABROEK

60329D 67-A SINUSOIDAL CURVE FIT

GIVEN N DATA (X,Y) THIS PROGRAM COMPUTES THE COEFFICIENTS A,B,C AND D OF THE BEST CURVE:
Y =A SIN**3X+B SIN**2X+C SINX+D
YOU CAN ALSO COMPUTE EXPECTED Y'S FOR GIVEN X'S.

210PROGRAM STEPS
JOHN VAN THIELEN
B - STABROEK

60330D 67-RANDOM NUMBER GENERATOR

PROGRAM COMPUTES DIFFERENT NUMBERS AT RANDOM WITH 1, 2, OR 3 FIGURES. A SPECIAL RANDOM NUMBER GENERATOR IS USED.

045PROGRAM STEPS
JOHN VAN THIELEN
B - STABROEK

60331D 67-RANDOM SYSTEM OF 4 EQUATIONS
IN 4 UNKNOWNS

AFTER THE INPUT OF A STARTSEED, THIS PROGRAM COMPUTES:
FIRST A SYSTEM OF 4 EQUATIONS IN FOUR UNKNOWNS (YOU CAN ASK THIS SYSTEM) AND AFTER THAT THE SOLUTION OF THIS RANDOM-SYSTEM.
A SPECIAL RANDOM NUMBER GENERATOR IS USED AND THE SYSTEM IS SOLVED WITH THE GAUSSIAN ELIMINATION-METHOD.

186PROGRAM STEPS
JOHN VAN THIELEN
B - STABROEK

60332D 67-PROBABILITY VECTOR

AFTER THE INPUT OF A STARTSEED S AND THE NUMBER OF WANTED LOOPS, THE PROGRAM COMPUTES THE LENGTH OF THE MEAN-VECTOR AND THE MEAN-ANGLE WITH THE X-AXIS.

048PROGRAM STEPS
JOHN VAN THIELEN
B - STABROEK

60333D 67-PSEUDO-POTENTIAL TEMPERATURE

60333D (CONTD)

CALCULATES THE PSEUDO-POTENTIAL TEMPERATURE FROM THE INPUT PARAMETERS AIR-PRESSURE (P), TEMPERATURE (T), AND DEW POINT TEMPERATURE (TD).ADDITIONAL OUTPUTS ARE HEIGHT (PRESSURE LEVEL) AND TEMPERATURE OF THE DYNAMIC CONDENSATION LEVEL.

222PROGRAM STEPS
HELMUT FUSSY
D - BRAUNSCHWEIG

60334D 67-SUPER DATAFLEX 200 AN IMPROVED
DATA STORAGE SYSTEM

THIS PROGRAM EXPANDS THE FACILITIES OF DATAFLEX 210, WHICH ALSO SEE. ANY SEGMENT OF AN ARRAY HAVING UP TO 22 ROWS AND 10 COLUMNS MAY BE RECALLED, MODIFIED OR STORED. IF ARRAYS ARE LIMITED TO 20 ROWS DATA MAY BE ALSO
1.SUMMED IN EITHER OF 2 REGISTERS/
2.SORTED WITHIN PREDEFINED LOWER AND UPPER LIMITS.
AN ARRAY STATUS WORD IS PROVIDED BUT DATA IS NOT VALIDATED.

224PROGRAM STEPS
D T RANSOM
UK - KENT

60335D 67-CARDIOVASCULAR DISEASE RISK

THIS PROGRAM COMPUTES THE PROBABILITY OF DEVELOPING A CARDIOVASCULAR DISEASE WITHIN EIGHT YEARS BY ENTERING:SEX, AGE, SERUM CHOLESTEROL,SYSTOLIC BLOOD PRESSURE LEFT VENTRICULAR HYPERTROPHY, GLUCOSE INTOLERANCE AND CIGARETTE SMOKING.
COMPUTED IS ALSO THE AVERAGE RISK TO A PERSON OF THAT AGE AND THE RELATIVE RISK. ONE PROGRAM CARD AND ONE DATA CARD.

213PROGRAM STEPS
ROELF BACKUS
NL - SCHIEDAM

60336D 67-PROPERTIES OF WATER AND STEAM

IN CASE OF GIVEN TEMPERATURE OF WATER,PROGRAM COMPUTES: PRESSURE OF WATER IN STATE OF SATURATION, SPECIFIC ENTHALPIE OF WATER AND STEAM, SPECIFIC ENTROPIE OF WATER & STEAM, SPECIFIC VOLUME OF WATER & STEAM. IN CASE OF GIVEN PRESSURE, PROGRAM COMPUTES TEMPERATURE OF STEAM IN STATE OF SAT. IN CASE OF GIVEN TEMPERATURE & SPECIFIC ENTROPIE OF WET STEAM (SUPER-SATURATED STEAM) PROGRAM CALCULATES SPECIFIC ENTHALPIE OF WET STEAM. IN ALL CASES THESE VARIABLE COMPUTED OPIONALLY IN SI OR TECHNICAL UNITS.

215PROGRAM STEPS
ANDRA'S ILLYES
H - SZEKESFEHERVA'R

60337D 67-LC-LADDER NETWORK REALIZATION

GIVEN THE COEFFICIENTS OF THE INPUT IMMITTANS AND THE ZEROS OF TRANSMISSION, THE COMPONENTS OF THE LC-LADDER NETWORK IS COMPUTED. MAX. DEGREE IS FROM 6 TO 9 DEPENDING ON THE CONFIGURATION.

287PROGRAM STEPS
NILS HAAHEIM
N - TRONDHEIM

60338D 97-CURVATURE OF A SPATIAL CURVE

THIS PROGRAM COMPUTES THE CURVATURE AND THE FIRST OR SECOND DERIVATIVE OF ANY SPATIAL CURVE (GIVEN BY ITS PARAMETRIC EQUATIONS) WITH A GOOD ACCURACY.

135PROGRAM STEPS
PASCAL FAIVRE

60338D (CONTD)

CH - DELEMONT

60339D 97-DYNAMIC BALANCING OF ROTOR BY
THE ONE-PLANE VECTOR METHOD

KNOWING THE VECTOR RESPONSIBLE OF THE INITIAL UNBALANCE AT THE ONE PLANE, THE TRIAL WEIGHT P1 WITH ITS POSITION AND THE CORRESPONDENT UNBALANCE VECTOR, IT MAY BE DETERMINED THE CORRECTOR WEIGHT P IN THE SELECTED BALANCING PLANE OF THE ROTOR.

080PROGRAM STEPS
ANTONIO JIMENEZ-ARANA
E - MADRID

60340D 97-DYNAMIC BALANCING OF ROTOR BY
THE TWO-PLANE VECTOR METHOD

KNOWING THE VECTORS RESPONSIBLE OF THE INITIAL UNBALANCE AT THE TWO PLANES, THE TRIAL WEIGHTS P1 AND P2 WITH THEIR POSITIONS AND THE CORRESPONDENT UNBALANCE VECTORS, IT MAY BE DETERMINED THE CORRECTOR WEIGHTS PA AND PB, ONE EACH IN THE TWO SELECTED BALANCING PLANES OF THE ROTOR.

224PROGRAM STEPS
ANTONIO JIMENEZ-ARANA
E - MADRID

60341D 67-TIME-ARITHMETIC

TIMES IN THE FORM HOURS/MINUTES/ SECONDS CAN BE ADDED TO ANOTHER OR SUBSTRACTED FROM ANOTHER.A TIME CAN BE MULTIPLIED WITH A CONSTANT FACTOR OR DIVIDED THROUGH IT. A TIME WITH MINUTES AND/OR SECONDS GREATER THAN 59 WILL BE CONVERTED INTO A "NORMAL" TIME, WHERE MINUTES AND SECONDS ARE LESS THAN 60.

136PROGRAM STEPS
GERD SCHROEDER
D - POECKING

60342D 67-CONVERSION FROM A REAL-NUMBER
INTO A DECIMAL-NUMBER

A SO CALLED "REAL * 4" - NUMBER, WHICH GOES CONFORM TO THE CONVENTIONS OF FORTRAN IV, WILL BE CONVERTED INTO A NORMAL FLOATING-POINT-NUMBER OF THE DECIMAL SYSTEM. IT WILL BE ACCEPTED HEXADECIMAL NUMBERS FROM 16**(-65) UNTIL 16**(+57) * (16**6-1) , WHICH ARE DECIMAL NUMBERS FROM ABOUT
0.5397605 * 10**(-78) TO
0.7237005 * 10**(+76) .

139PROGRAM STEPS
GERD SCHROEDER
D - POECKING

60343D 67-CALCULATION OF SOME STATISTIC
FACTORS

FOR A GIVEN SAMPLE=MATRIX (MAX. 9X9) WILL BE CALCULATED X**2, C, C MAX AND C CORR, WITHOUT A SEPARATE CALCULATION OF EXPECTED FREQUENCY AND THE REQUIRED SUMS. THE ONLY WORK TO DO IS TO KEY IN THE OBSERVED FREQUENCIES TWICE.

169PROGRAM STEPS
GERD SCHROEDER
D - POECKING

60344D 67-FABRIC SCHEDULE

THIS PROGRAM SORTS THE UNSORTED INPUT OF DIFFERENT FABRIC TYPES, COMPUTES THEIR AREAS AND WEIGHTS AND DISPLAYS THE RESULT IN SUCH A MANNER THAT THE FABRIC TYPE, TOTAL AREA OF THAT TYPE AND TOTAL WEIGHT OF THAT TYPE APPEAR IN THE X REGISTER.

224PROGRAM STEPS

60344D (CONTD)

MARK CRACKNELL
UK - LAGOS

60345D 67-SECANT SOLUTION OF F(X)

THIS PROGRAM FINDS THE ROOTS AND THE TURNING POINT OF ANY FUNCTION F(X) PROVIDED THAT REAL ROOTS AND TURNING POINTS EXIST. THE FUNCTION (S) MUST NOT TAKE MORE THAN 87 STEPS TO KEY IN. UP TO 6 FUNCTIONS MAY BE ENTERED AT ONCE. REGISTERS R7-R9, RS0-RS9 AND RE ARE AVAILABLE TO THE USER. THE PROGRAM IS BASED ON SD IIA IN THE STANDARD PAC.

137PROGRAM STEPS
MARK CRACKNELL
UK - LAGOS

60346D 67-ROUGH CUT AND FILL VOLUME

IF THE CROSS SECTION OF A CUTTING OR AN EMBANKMENT CAN BE REPRESENTED BY A SHAPE WITH FOUR STRAIGHT SIDES THE OFFSET FROM THE CENTRE LINE AND THE LEVEL OF EACH CORNER BEING KNOWN, THIS PROGRAM WILL FIND THE AREA OF CUT OF FILL UP TO (OR DOWN FROM) A PARTICULAR LEVEL, THE AREA REMAINING AND THE PERCENTAGE THAT EACH IS OF THE WHOLE.

203PROGRAM STEPS
MARK CRACKNELL
WAN - LAGOS

60347D 67-TTL WIRED AND

PROGRAM CALCULATES LIMITS OF RESISTOR R FOR "WIRED AND" WITH TTL-OPEN COLLECTOR CIRCUITS. "WIRED AND" HAVE M TTL CIRCUITS AND "FAN OUT" MUST BE M.

082PROGRAM STEPS
VLADIMIR BRCZOVIC
YU - ZAGREB

60348D 67-CEBYSEV INTEGRATION OF A FUNCTION OF ONE VARIABLE

SAME AS PROGRAM 50572D; IMPROVED PROGRAMMING REDUCES THE PROGRAM TO 102 STEPS (HALF A CARD).

102PROGRAM STEPS
JEAN THIBERGE
F - CHERBOURG

60349D 67-97-AMICABLE AND PERFECT NUMBERS

THIS PROGRAM CAN, AT WILL:
1.COMPUTE THE SUM OF THE DIVISORS OF A NUMBER;
2.DETERMINE IF A NUMBER IS PERFECT OR HAS AN AMICABLE NUMBER;
3.EXECUTE A SYSTEMATICAL RESEARCH OF AMICABLE AND PERFECT NUMBERS BETWEEN TWO LIMITS FIXED BY THE USER. ALSO PRIME TESTER.

204PROGRAM STEPS
JEAN THIBERGE
F - CHERBOURG

60350D 67-MASTERMIND

IN THIS HALF-CARD PROGRAM, THE USER ENTERS THE LENGTH OF CODE (1 TO 9 FIGURES), THE MAXIMUM VALUE OF THE FIGURES (0 TO 9) AND OPTIONALLY A SEED. MAC PLAYS THE CODER, ANSWERING YOUR ESSAYS IN LESS THAN 20 SECONDS.

097PROGRAM STEPS
JEAN THIBERGE
F - CHERBOURG

60351D 67-CHAIN PARAMETERS

PROGRAM CALCULATES THE PARAMETERS OF CHAIN EQUATIONS OF A LADDER WORK

107PROGRAM STEPS

60351D (CONTD)

ILKKA VIRTANEN
SF - ESPOO

60352D 67-DATA STORAGE

THIS PROGRAM MAKES A STORAGE DIVISION, THEN FOR EACH CARD I HAVE 46 STORAGES. THERE ARE 8 FORMAT OF I/O. ALSO, I CAN SEE ALL STORAGES, AS SAME AS THE "RE6" KEY.

178PROGRAM STEPS
JOSE M MOLINA SANCHEZ
E - MADRID

60353D 67-NAVIGATIORS NOON DATA 2

THIS PROGRAM COMPUTES RL DISTANCE FROM NOON TO NOON, AVERAGE SPEED AND TOTAL AVERAGE SPEED OF SEAPASSAGE. IT SHOWS THE REMAINING DISTANCE OF THE PLANNED VOYAGE AND YOU CAN CHOOSE THREE DIFFERENT SPEEDS OF YOUR VESSEL TO GET THE ESTIMATED DATE AND TIME OF ARRIVAL IN CONSIDERATION OF TIME ZONE CHANGES.

222PROGRAM STEPS
RUDOLF KREUTZER
D - TANGSTEDT

60354D 67-FOUR CITIES - DECIDE MEETING PLACE

FOUR PEOPLE LIVING IN FOUR CITIES FAR APART - DECIDED TO MEET IN ONE OF THE CITIES. THE PROGRAM CALCULATES WHICH OF THE FOUR CITIES SHOULD BE CHOSEN AS A MEETING PLACE -PROVIVED THAT THE TOTAL TRAVELLING DISTANCES (BY AIR) SHOULD BE A MINIMUM. THE LONGITUDE AND THE LATITUDE OF THE FOUR CITIES MUST BE KNOWN.

137PROGRAM STEPS
CHRISTIAN W HIRSCH
N - LYSAKER

60355D 67-N-POINT GAUSSIAN QUADRATURE

THIS PROGRAM IS A DEVELOPMENT OF PROGRAM 51269D, 96-POINT GAUSSIAN QUADRATURE. THE FUNCTION TO BE INTEGRATED MAY TAKE 114 STEPS AND MAY USE 8 DATA REGISTERS. THIS PROGRAM IS JUST A BIT FASTER. THE DEGREE OF THE USED FORMULA, N, MAY BE ARBITRARY. DATA CARD CONTENTS ARE ENCLOSED FOR N=12, 24, 48, 96 (1, 1 1/2, 2 1/2, 5 CARDS).

110PROGRAM STEPS
WOLFGANG SEEWALD
CH - ZURICH

60356D 67-DECOMPOSITION INTO PARTIAL FRACTIONS

GIVEN A RATIONAL FUNCTION R(X)=P(X)/Q(X), P AND Q BEING POLYNOMIALS OF DEGREE<=8,THIS PROGRAM COMPUTES THE PRINCIPAL PART FOR ANY REAL POLE X0 (WHICH MUST BE GIVEN). HENCE, IF ALL ZEROS OF Q ARE REAL AND DEGP< DEGQ, R(X) IS DECOMPOSED INTO PARTIAL FRACTIONS. P AND Q ARE ENTERED ONCE, THEN STORED ON A DATA CARD WHICH MUST BE LOADED ONCE FOR EACH POLE X0. OUTPUT IS OF THE FORM B1/(X-X0)+...+BL/(X-X0)**L OR (A(L-1)*X**(L-1)+...+A0)/(X-X0)++L.

222PROGRAM STEPS
WOLFGANG SEEWALD
CH - ZURICH

60357D 67-HYPERGEOMETRIC FUNCTIONS

THIS PROGRAM EVALUATES A GIVEN HYPERGEOMETRIC OR CONFLUENT HYPERGEOMETRIC SERIES FOR ANY REAL OR COMPLEX ARGUMENT. THE DERIVATIVES CAN BE EVALUATED, TOO.

190PROGRAM STEPS

60357D (CONTD)

WOLFGANG SEEWALD
CH - ZURICH

60358D 67-MINIMIZING A UNIMODAL FUNCTION (FIBONACCI TECHNIQUE)

THIS PROGRAM MINIMIZES OR MAXIMIZES A FUNCTION OF ONE VARIABLE, USING THE FIBONACCI TECHNIQUE. THE FUNCTION SHOULD NOT HAVE MORE THAN ONE EXTREMUM (THE WANTED MINIMUM OR MAXIMUM), AND MAY TAKE 98 PROGRAM STEPS.

125PROGRAM STEPS
WOLFGANG SEEWALD
CH - ZURICH

60359D 67-MOMENTS OF NORMAL, CHI-SQUARE, T, AND F DISTRIBUTIONS

THIS PROGRAM COMPUTES MEAN,VARIANCE 3RD AND 4TH CENTRAL MOMENT,SKEWNESS AND EXCESS FOR:
1)NORMAL DISTRIBUTION,
2)CHI-SQUARE DISTRIBUTION,
3)STUDENT'S DISTRIBUTION,
4)F DISTRIBUTION, IF THE PARAMETERS ARE KNOWN.

203PROGRAM STEPS
WOLFGANG SEEWALD
CH - ZURICH

60360D 67-MOMENTS OF EXPONENTIAL, GAMMA, BETA, POISSON DISTRIBUTION

THIS PROGRAM COMPUTES MEAN,VARIANCE 3RD AND 4TH CENTRAL MOMENT,SKEWNESS AND EXCESS FOR:
1)EXPONENTIAL DISTRIBUTION,
2)GAMMA DISTRIBUTION,
3)BETA DISTRIBUTION,
4)POISSON DISTRIBUTION, IF THE PARAMETERS ARE KNOWN.

142PROGRAM STEPS
WOLFGANG SEEWALD
CH - ZURICH

60361D 67-MOMENTS OF BINOMIAL, GEOMETRIC, HYPERGEOMETRIC DISTRIBUTION

THIS PROGRAM COMPUTES MEAN,VARIANCE 3RD AND 4TH CENTRAL MOMENT,SKEWNESS AND EXCESS OF:
1)BINOMIAL DISTRIBUTION,
2)NEGATIVE BINOMIAL DISTRIBUTION,
3)GEOMETRIC DISTRIBUTION,
4)HYPERGEOMETRIC DISTRIBUTION, IF THE PARAMETERS ARE KNOWN.

203PROGRAM STEPS
WOLFGANG SEEWALD
CH - ZURICH

60362D 67-NORMAL DISTRIBUTION AND INVERSE, HIGH PRECISION

THIS PROGRAM COMPUTES THE DENSITY, THE PROBABILITIES FOR X<=C AND X>C, AND C IF THE PROBABILITY FOR X<=C OR X>C IS GIVEN. X IS A NORMALLY DISTRIBUTED RANDOM VARIABLE WITH MEAN MU AND ST. DEV. SIGM. ACCURACY IS VERY HIGH (LIKE HP-32E BUILT-IN FUNCTION);TIME: FOR PROB. BELOW 20 SECONDS;FOR INVRSE PROB., ABOUT 80 SECONDS AT MOST.

218PROGRAM STEPS
WOLFGANG SEEWALD
CH - ZURICH

60363D 67-FROST-KALKWARF-THODOS-VAPOUR-PRESSURE CORRELATION

THE FROST-KALKWARF-THODOS EQUATION IS APPLIED TO FIND THE VAPOUR-PRESSURE CORRELATION FOR ALL NON POLAR FLUIDS. ONLY THE CRITICAL PRESSURE AND TEMPERATURE AND THE BOILING TEMPERATURE OF THE FLUID ARE REQUIRED. THE TRIAL-AND-ERROR CALCULATION IS SOLVED BY THE NEWTON-RAPHSON METHOD.

60363D (CONTD)

182PROGRAM STEPS
GIUSEPPE LIGATO
I - CUSANO MILANINO

60364D 67-HYDROCYCLONE DESIGN

SOLIDS IN A LIQUID STREAM CAN BE SEPARATED BY A HYDROCYCLONE. THIS DESIGN PROGRAM PROVIDES BEST DIMENSIONS AND PERFORMANCE.

165PROGRAM STEPS
GIUSEPPE LIGATO
I - CUSANO MILANINO

60365D 67-ARRAY ADDRESSING REGISTER

ONE REGISTER CONTAINS THE NECESSARY PARAMETERS TO ADDRESS AN ARRAY HAVING DIMENSIONS UP TO 99**99. EXAMPLE SEQUENCE RETURNS COMPOSITE ROW/COLUMN CODE OF ADDRESSED ELEMENTS. ANY USER DEFINED SEQUENCE ACCOMMODATED.

087PROGRAM STEPS
D T RANSOM
UK - CHISLEHURST

60366D 67-ECONOMICALLY STEPPING

THREE ROUTINES ARE GIVEN WHICH IMPLEMENT THE STATEMENT "FOR I=A TO B STEP C" IN FOUR, TWO OR ONE REGISTERS. POSITIVE OR NEGATIVE STEPPING FOR A RESTRICTED RANGE OF POSITIVE INTEGERS ARE ACCOMMODATED. "BASICALLY STEPPING" (51749D) IS A COMPANION PROGRAM.

161PROGRAM STEPS
D T RANSOM
UK - CHISLEHURST

60367D 67-AZIMUTH OF THE SUN BY ALTITUDE

THIS PROGRAM COMPUTES THE AZIMUTH OF THE SUN AND REFERENCE MARK FROM A SOLAR OBSERVATION BY THE METHOD OF ALTITUDE; NO ACCURATE TIME SIGNALS ARE REQUIRED.

224PROGRAM STEPS
M HOOIJBERG
NL - GENDEREN

60368D 67-GEOCENTRIC CARTESIAN/ GEODETIC CO-ORDINATE CONVERSION

THIS PROGRAM CONVERTS GEOCENTRIC 3-D CARTESIAN CO-ORDINATES INTO GEODETIC CO-ORDINATES OR VICE VERSA; ANY SPHEROID MAY BE USED.

213PROGRAM STEPS
M HOOIJBERG
NL - GENDEREN

60369D 67-LEAST SQUARES ADJUSTMENT OF AN INTERSECTION (360 DEG)

TO DETERMINE THE CO-ORDINATES OF STATION P, DIRECTIONS HAVE BEEN MEASURED FROM SURROUNDING STATIONS, THE CO-ORDINATES OF WHICH ARE KNOWN. THE PROGRAM GIVES A LEAST SQUARES ADJUSTMENT OF THE PROVISINAL CO-ORDINATES OF STATION P.

203PROGRAM STEPS
M HOOIJBERG
NL - GENDEREN

60370D 67-LEAST SQUARES ADJUSTMENT OF A RE-SECTION (360 DEG)

TO DETERMINE THE CO-ORDINATES OF STATION P, DIRECTIONS HAVE BEEN MEASURED TOWARDS SURROUNDING STATIONS. THIS PROGRAM GIVES A LEAST SQUARES ADJUSTMENT OF THE PROVISINAL CO-ORDINATES OF STATION P.

224PROGRAM STEPS
M HOOIJBERG
NL - GENDEREN

60371D 67-HEIGHT OF A TORISPHERICAL DISHED HEAD (BS. 1966)

THIS PROGRAM WILL COMPUTE THE HEIGHT OF A TORISPHERICAL DISHED HEAD TO BS 1966 (BRITISH STANDARD). FOR INPUTS OF D;R;R. ALSO FOR THE SPECIAL CASE OF RI=DO; RI=0.1XDO ALSO FOR THE SPECIAL CASE OF RI=0.8XDO; RI=0.154XDO.
FOR THESE SPECIAL CASES ONLY DO AND T ARE INPUT.

071PROGRAM STEPS
LESLIE A TIMPERLEY
UK - FAILSWORTH

60372D 67-PIPE GEOMETRY (CASE I)

THIS PROGRAM COMPUTES THE GEOMETRY OF AN OMEGA BEND IN A PIPE GIVEN THE BEND RADIUS AND THE HEIGHT OF THE OMEGA.

094PROGRAM STEPS
LESLIE A TIMPERLEY
UK - FAILSWORTH

60373D 67-PIPE GEOMETRY (CASE II)

THIS PROGRAM COMPUTES THE GEOMETRY OF AN OMEGA BEND IN A PIPE GIVEN THE BEND RADIUS, THE HEIGHT OF THE OMEGA AND THE DISTANCE BETWEEN THE FIRST AND LAST BENDS.

130PROGRAM STEPS
LESLIE A TIMPERLEY
UK - FAILSWORTH

60374D 97-STEAM BOILER EFFICIENCY BY HEAT LOSS METHOD. UNCORRECTED

STEAM BOILER EFFICIENCY BY HEAT LOSS METHOD (SIMPLIFIED), UNCORRECTED TO STANDARD OR GUARANTEE CONDITIONS.ACCORDING TO ASME TEST CODES.

165PROGRAM STEPS
ANTONIO JIMENEZ-ARANA
E - MADRID

60375D 97-STEAM BOILER EFFICIENCY BY HEAT LOSS METHOD. CORRECTED

STEAM BOILER EFFICIENCY BY HEAT LOSS METHOD (SIMPLIFIED),CORRECTED TO STANDARD OR GUARANTEE CONDITIONS.ACCORDING TO ASME TEST CODES.

179PROGRAM STEPS
ANTONIO JIMENEZ-ARANA
E - MADRID

60376D 67-TWO-DIMENSIONAL INTEGRATION

PROGRAM EVALUATES THE 2-DIMENSIONAL INTEGRAL OF A GIVEN F(X,Y) BETWEEN ARBITRARY FINITE LIMITS XO,XM,YO, YN BY MAKING USE OF A METHOD THAT YIELDS EXACT VALUES IF F(X,Y) IS A 3RD DEGREE (OR LESS) POLYNOMIAL IN X,Y AND VERY GOOD APPROXIMATIONS OTHERWISE. ACCURACY DEPENDS ON USER'S SELECTED VALUES FOR M.N. INTEGRAL CAN BE RECALCULATED WITH THE SAME LIMITS AND DIFFERENT M.N WITHOUT REINTRODUCING LIMITS & VISA VERSE.115 STEPS & RO,R1...,R9 LEFT TO DEFINE F(X,Y). FULLY DOCUMENTED (7 PAGES).

109PROGRAM STEPS
VALENTIN ALBILLO
E - MADRID

60377D 67-FOURIER SERIES-HARMONIC ANALYSIS DISCRETE DOMAIN

GIVEN N EQUALLY SPACED DATA POINTS (X,Y)THAT ARE SAMPLES OF A PERIODIC FUNCTION, PROGRAM CALCULATES AND STORES UP TO 10 HARMONICS (AK,BK)AT ONE TIME. ANY ERROR IN DATA INPUT MAY BE DELETED. PROJECTIONS BASED ON K HARMONICS (K<=9) CAN BE MANUALLY OR AUTOMATICALLY PERFORMED

60377D (CONTD)

OVER A GIVEN INTERVAL. THE SUM OF SQUARED ERRORS FOR EACH K IS ALSO AVAILABLE. REDISPLAY OF HARMONICS IS POSSIBLE AT ANY TIME. ABOUT 2 SECONDS PER HARMONIC IN CALCULATION AND 3 IN EVALUATION.
FULLY DOCUMENTED. (7 PAGES)

224PROGRAM STEPS
VALENTIN ALBILLO
E - MADRID

60378D 67-CHESS-MATE WITH KING, BISHOP, & KNIGHT VERSUS KING ALONE

THE MATE WITH KING,BISHOP,KNIGHT VS KING ALONE IS VERY DIFFICULT FOR THE AVERAGE CHESS PLAYER,BUT IF YOU MANAGE TO ARRIVE AT A STANDARD POSITION FOR THE WINNING FORCES (A TASK WHICH IS MUCH MORE EASILY ACCOMPLISHED), CALCULATOR WILL TERMINATE THE CHECKMATE IN LESS THAN 9 MOVES (THE OTHER KING MAY BE IN ANY LEGAL POSITION WITHIN A 3X4 RECTANGLE). CHECK & MATE CONDITIONS ARE INDICATED AS WELL AS NUMBER OF MOVES. NO DATA CARD REQUIRED. VERY SHORT TIMES.
FULLY DOCUMENTED. (7 PAGES)

197PROGRAM STEPS
VALENTIN ALBILLO
E - MADRID

60379D 67-4X4 MATRIX INVERSION SUBROUTINE

IT CALCULATES THE INV. MAT. OF A 4X4 MAT. STORED IN R1 THROUGH R16. DURING INVERSION , THE INV. MAT. REPLACES GIVEN MAT. IN STORAGE. IT IS INTENDED TO BE USED AS A SUBROUTINE OF A MAIN PROGRAM, BUT CAN BE USED SEPARATELY AS WELL. INPUT AND OUTPUT ROUTINES TAKE 16 STEPS, AND INVERSION PROCESS ITSELF ONLY 123 STEPS. RUNNING TIME IS ABOUT 95 SECONDS . 5 REGISTERS AND 11 LABELS REMAIN FREE.
FULLY DOCUMENTED. (7 PAGES.)

139PROGRAM STEPS
VALENTIN ALBILLO
E - MADRID

60380D 67-SPECIAL FUNCTIONS: S&C FRESNELL, JN&IN BESSEL, ELLIP. & MORE

COMPUTES ANY OF THE FOLLOWING:SIN & COS. FRESNELL INTEGRALS, JN(X) & IN (X) BESSEL FUNCTIONS,SINE INTEGRAL, COMPLETE ELLIP. INTEGRAL OF THE 2ND KIND, AND EXP (-X**2) INTEGRAL. EVERY FUNCTION BEHAVES LIKE A BUILT IN ONE X IN LAST X,F(X) OVERWRITES W;Y;Z;T UNCHANGED , ALLOWING YOU TO USE RPN IN CALCULATIONS. ALL PRIMARY REGISTERS ARE UNDISTURBED BY PROGRAM. FULL DOCUMENTATION ABOUT RANGE OF ARGUMENTS, RUNNING TIME & PRECISION FOR EVERY FUNCTION (7 PAGES)

218PROGRAM STEPS
VALENTIN ALBILLO
E - MADRID

60381D 67-PLANES AND POINTS

PROGRAM GIVES:
1.NORMAL EQUATION OF THE PLANE
2.ANGLE BETWEEN TWO PLANES
3.DISTANCE FROM A POINT TO A PLANE
4.CENTRE OF INTERSECTION OF THREE PLANES
5.PLANE DELIMITED BY THREE POINTS
6.AREA OF TRIANGLE DELIMITED BY THREE POINTS (VERTICES)
7.VOLUME OF TETRAHEDRON, KNOWN ITS FOUR VERTICES.

223PROGRAM STEPS
FELIPE LANDA
E - CORDOBA

60382D 67-FREE FLOW THROUGH SEVERAL OVERFLOWERS

60382D (CONTD)

THIS PROGRAM CALCULATES FREE FLOW Q IN M3/SEC, GIVEN THE REST DATA - VO ALPHA H HI S - IN THE METRIC SYSTEM ALL THE NECESSARY COEFFICIENTS ARE LOADED VIA A DATA CARD, AUTOMATICALLY FED BY THE PROGRAM ITSELF.

216PROGRAM STEPS
JIMMY PLATONIS
GR - ATHENS

60383D 97-TRIOPOLY, COMMERCIAL BUSINESS SIMULATION

COMMERCIAL BUSINESS SIMULATION. FOR UP TO 3 COMPETING COMPANIES. EACH COMPANY IS SELLING THE SAME PRODUCT IN THE SAME MARKET. EACH YEAR, MANAGERS DECIDE A STRATEGY, CAN BUY INFORMATION ON COMPETITORS STRATEGIES, AND MODIFY THEIR STRATEGY ACCORINGLY. MARKET REACTIONS,FINANCIAL CONSTRAINTS AND COMPETITION DETERMINE YOUR PERFORMANCES, SHOWN IN SUMMARIZED FINANCIAL STATEMENTS OF EACH COMPANY AT EACH YEAR END. AFTER A FEW YEARS, YOUR COMPANY WILL HAVE GROWN, OR BE BANKRUPT.

448PROGRAM STEPS
FRANCOIS GAUCHENOT
F - HOUILLES

60384D 97-FASTER MIND

SMART IS NOT ENOUGH. THE CHALLENGE IS TO FIND OUT THE HIDDEN CODE WITH A MINIMUM OF GUESSES AND TIME. DO NOT GET TOO NERVOUS WHILE THE MACHINE IS BLINKING, WAITING FOR YOUR NEXT CLEVER GUESS, IT IS JUST MEASURING YOUR THINKING TIME, WHICH WILL BE PRINTED WHEN YOU EVENTUALLY DISCOVER THE CODE. CHOOSE THE DIFFICULTY OF THE CODE, FROM 1 TO 8 DIGITS AND FROM 1 TO 10 POSSIBLE VALUES FOR EACH DIGIT.

224PROGRAM STEPS
FRANCOIS GAUCHENOT
F - HOUILLES

60385D 67-HOW TO DRAW A FUNCTION ON A GIVEN PIECE OF PAPER

HELPED BY HP,YOU ARE ABLE TO DRAW A FUNCTION OR A PART OF IT ON A GIVEN PIECE OF PAPER. HP SHOWS YOU POINT BY POINT HOW YOU HAVE TO DRAW THE FUNCTION USING THE WHOLE PIECE OF PAPER, THE POSITION OF THE X-AXIS AND THE MEASURES OF BOTH AXES. YOU CAN USE LINEAR AXES, LOGARITHMICAL ONES OR BOTH. YOU NEED A CHECKED PAPER, THE MEASURES OF THE SQUARES MUST BE ONE SQUARE MILLIMETRE.

152PROGRAM STEPS
BURKHARD KASTEN
D - SAARBRUECKEN

60386D 67-HUFFMAN-CODING

IF YOU HAVE SYMBOLS (ALPHABET) AND ITS PROBABILITIES, PROGRAM CALCULATES THE GRAPH FOR ITS HUFFMAN-CODE. UP TO 22 SYMBOLS, YOU NEED ONLY ONE INPUT. AT MORE INPUTS THERE IS NO LIMIT FOR THE NUMBERS OF SYMBOLS. TO DISCERN SYMBOLS CODE-NUMBERS UP TO 100 ARE ALSO STORED. PROGRAM ALSO CALCULATES THEORETICAL AND BY GRAPH REALIZED ENTROPY.

173PROGRAM STEPS
HORST VOELZ
DDR - BERLIN

60387D 67-LINEAR SYSTEM OF ORDER 3<N<12

PROGRAM CALCULATES THE UNKNOWNS OF LINEAR SYSTEMS OF ORDER 3<N<12. ELEMENTS MUST BE ENTERED ONLY ONCE. GAUSSIAN ALGORITHM IS USED. NEEDED ARE N DATA-CARDS AND N**2 - 6

60387D (CONTD)

PASSINGS OF ITS,EACH ONLY ONE SIDE. CALCULATOR INSTRUCTS THE USER WHICH DATA VALUES AND WHICH DATA-CARDS SHOULD BE ENTERED.

222PROGRAM STEPS
HORST VOELZ
DDR - BERLIN

60388D 67-WAVEFORM-PARAMETERS

PROGRAM CALCULATES FOR ANY WAVEFORM GIVEN BY EACH NUMBER OF EQUIDISTANT MEASURED POINTS OR FOR A FUNCTION, WHICH HAS N PARTS (N<=5) VALUES OF R.M.S; AVERAGE, D.C.; POSITIVE AND NEGATIVE O-PEAK.

112PROGRAM STEPS
HORST VOELZ
DDR - BERLIN

60389D 67-MORE REGISTERS WITH 5 DIGITS

PROGRAM WORKS LIKE 52376D BUT WITH AN ACCURACY OF 5 DIGITS IN A RANGE FROM +-10**-5 TO +-9.999*10**4. 48 REGISTERS EXIST.

111PROGRAM STEPS
HORST VOELZ
DDR - BERLIN

60390D 67-FUNCTION OF AUTO - AND CROSS -CORRELATION

PROGRAM CALCULATES VALUES OR FUNCTIONS OF AUTO - AND CROSS CORRELATION FROM NORMAL OR PERIODIC FUNCTIONS, WHICH HAVE N PARTS (N<=6)

139PROGRAM STEPS
HORST VOELZ
DDR - BERLIN

60391D 67-COORDINATES AND REDUCED LEVELS

THIS PROGRAM WILL REDUCE FIELD OBSERVATIONS OF HORIZONTAL AND VERTICAL ANGLES AND SLOPE DISTANCES

60392D 67-EQUAL SHIFT QUADRILATERALS

THIS PROGRAM WILL ADJUST THE ANGLES OF A BRACED QUADRILATERAL IN SUCH A WAY THAT THE GEOMETRIC AND SIDE CONDITIONS ARE ALL SATISFIED. THE PROGRAM ALSO ALLOWS THE USER TO SELECT WHETHER ANGULAR OUTPUT SHOULD BE TO THE NEAREST SECOND, NEAREST 0.1 OF A SECOND OR THE NEAREST 0.01 OF A SECOND.

213PROGRAM STEPS
MARK CRACKNELL
WAN - LAGOS

60393D 67-THREE POINT CURVES

THE PROGRAM ENABLES THE USER TO FIND A HORIZONTAL CURVE THROUGH THREE POINTS GIVEN THE CHAINAGE OF ONE PT AND ITS COORDINATES AS WELL AS THOSE OF TWO OTHERS OR A VERTICAL CURVE THROUGH THREE POINTS GIVEN THE CHAINAGE AND LEVEL OF THE FIRST POINT, THE DISTANCE FROM THE FIRST TO THE SECOND POINT, THE DISTANCE FROM THE SECOND TO THE THIRD POINT AND THE LEVELS OF THE SECOND AND THIRD POINTS.

224PROGRAM STEPS
MARK CRACKNELL
WAN - LAGOS

60394D 67-PERSPECTIVE DRAWING

FROM GIVEN CO-ORDINATES ON THE PLAN THIS PROGRAM CAN CALCULATE THE PERSPECTIVE DRAWING CO-ORDINATES OF WHATEVER POINT AND THAT OF THE FLIGHT LINES MEETING POINTS. THE OBSERVER POINT CAN BE SHIFTED IN ALL DIRECTIONS AND THE SIGHT DIRECTION CAN BE DEVIATED HORIZONTALLY AND VERTICALLY WITHOUT

60394D (CONTD)

ANY NEED TO CHANGE THE PLAN CO-ORDINATES. TO OBTAIN THE WANTED SIZE OF THE PERSPECTIVE DRAWING, IT IS ENOUGH TO FIX THE WIDTH OR HEIGHT CO-ORDINATE OF A WHATEVER POINT.

185PROGRAM STEPS
PAOLO PELLICIARDI
I - BOLOGNA

60395D 67-HYPERGEOMETRIC, BINOMIAL AND POISSON DISTRIBUTION

THIS PROGRAM-COMBINATION CALCULATES SINGLE AND CUMULATIVE DENSITY OF THE HYPERGEOMETRIC, BINOMIAL AND POISSON DISTRIBUTIONS, OC-CURVES FOR ANY OF THESE DISTRIBUTION MODELS.NO LIMITS FOR HYPERGEOMETRIC DISTRIBUTION, EXECUTION TIME ABOUT 1.1N (SEC) (N=SAMPLE SIZE), INDEPENDENT OF N (=LOT SIZE)

141PROGRAM STEPS
L A MRAZ
CH - ROTHRIST

60396D 67-97-TWO PORT SCATTERING - TO ADMITTANCE - MATRIX CONVERSION

PROGRAM CONVERTS A GIVEN TWOPORT SCATTERING MATRIX TO ITS NORMALIZED ADMITTANCE MATRIX Y'. FROM THIS THE DENORMALIZED ADMITTANCE MATRIX Y CAN BE OBTAINED BY USING EQUAL OR DIFFERENT REFERENCE RESISTANCES AT THE TWO PORTS. INPUT AND OUTPUT USES CONVENIENT PROCEDURES FOR RECTANGULAR OR POLAR PARAMETERS. A COMPANION PROGRAM OFFERS INVERSE OPERATIONS. THE PROGRAM BELONGS TO A SET WHICH ALLOWS CONVERSION BETWEEN ALL COMMONLY USED TWOPORT MATRICES.

224PROGRAM STEPS
GEORGE W EPPRECHT
CH - ZURICH

60397D 67-97-TWOPORT ADMITTANCE - TO SCATTERING - MATRIX CONVERSION

PROGRAM TRANSFORMS A GIVEN TWOPORT ADMITTANCE MATRIX Y TO ITS NORMALIZED FORM Y' BY USING EQUAL OR DIFFERENT REFERENCE RESISTANCES FOR THE TWO PORTS. THE NORMALIZED MATRIX MAY BE CONVERTED TO THE CORRESPONDING SCATTERING MATRIX S. CONVENIENT INPUT AND OUTPUT PROCEDURES ARE PROVIDED FOR RECTANGULAR OR POLAR PARAMETERS. SEVERAL SAFEGUARDS PREVENT UNINTENDED CONVERSION OF IMPROPER MATRICES. COMPANION PROGRAMS OFFER INVERSE OPERATIONS AND CONVERSION TO OTHER MATRIX TYPES.

222PROGRAM STEPS
GEORGE W EPPRECHT
CH - ZURICH

60398D 97-NICOMA NUMBER FINDING GAME

THE CALCULATOR FINDS IN THREE QUESTIONS ANY NUMBER BETWEEN 1 AND 100 THAT YOU SECRETLY ARE THINKING OF.

037PROGRAM STEPS
JENS SUCKSDORFF
S - STOCKHOLM

60399D 67-LOGIC CONNEXIONS OF TWO N-DIGIT BINARY WORDS

THIS PROGRAM CONNECTS TWO BINARY WORDS OF UP TO TEN DIGITS IN SIX MOSTLY USUAL METHODS:
AND, OR EQUIVALENCE, NOR, XOR AND NAND. ADDITIONALLY, IT IS POSSIBLE TO NEGATE ONE INPUT WORD. THE PROGRAM IS VERY USEFUL TO CHECK LOGIC CIRCUIT DIAGRAMS.

187PROGRAM STEPS
RALPH DIETER

60399D (CONTD)

D - WEINSTADT

60400D 67-RATIONALS AS A SUM OF THREE RATIONAL CUBES

THIS PROGRAM GIVES US SOLUTIONS OF THE EQUATION
R = X**3 + Y**3 + Z**3
WHERE UNKNOWN X, Y, Z ARE RATIONAL NUMBERS AND R A GIVEN RATIONAL. (THIS IS A DIOPHANTINE EQUATION). IN THIS PROGRAM, TO AVOID AS POSSIBLE NUMBERS GREATER THAN 10**10 (IF NOT ERROR) MANY PRECAUTIONS ARE TAKEN IN THE MANIPULATIONS OF NUMERATORS AND DENOMINATORS. RESULTS ARE GIVEN IN THE IRREDUCIBLE FORM.

311PROGRAM STEPS
RAYMOND GIRAUD
F - LE PONTET

60401D 67-GENERAL SYSTEM OF 4 EQUATIONS IN 4 UNKNOWNS

PROGRAM COMPUTES THE SOLUTION OF A SYSTEM OF FOUR EQUATIONS IN FOUR UNKNOWNS. VARIOUS ELEMENTS (EXCEPT A11) CAN BE ZERO. YOU CAN ALSO COMPUTE EXPECTED VALUES TO CONTROL THE SOLUTIONS. THE GAUSSIAN ELEMINATION METHOD AND A SPECIAL SYSTEM ARE USED.

171PROGRAM STEPS
JOHN VAN THIELEN
B - STABROEK

60402D 67-GENERAL NORMAL DISTRIBUTION

GIVEN A POPULATION OF N ELEMENTS, THIS PROGRAM COMPUTES ALL NECESSARY DATA TO MAKE A SKETCH OF THE NORMAL DISTRIBUTION, ACCORDING TO THIS POPULATION AND FURTHERMORE A SPECIAL X**2 TO EXAMINE IF THE SAMPLE IS NORMAL DISTRIBUTED OR NOT

158PROGRAM STEPS
JOHN VAN THIELEN
B - STABROEK

60403D 67-MATH-PROBLEM I

GIVEN 5 NUMBERS, THIS PROGRAM COMPUTES THE BEST COMBINATION TO APPROXIMATE ANOTHER GIVEN NUMBER. ONLY (+, -, X AND /) MUST BE USED AND PARANTHESS ARE FORBIDDEN.

173PROGRAM STEPS
JOHN VAN THIELEN
B - STABROEK

60404D 67-THE SHORTEST WAY TO THE SEA

STARTING IN A CITY, YOU CAN GO THROUGH 13 OTHER CITY'S WHICH DISTANCES BETWEEN EACH OTHER ARE GIVEN.PROGRAM COMPUTES THE SHORTEST WAY TO THE SEA.

193PROGRAM STEPS
JOHN VAN THIELEN
B - STABROEK

60405D 67-97-TWOPORT SCATTERING - TO TRANSMISSION MATRIX CONVERSION

THE PROGRAM CONVERTS A TWOPORT SCATTERING MATRIX S TO THE CORRESPONDING, NORMALIZED OR DENORMALIZED TRANSMISSION MATRIX A (OR A'). EQUAL OR DIFFERENT REFERENCE IMPEDANCES MAY BE USED. THE PROGRAM USES THE SAME CONVENIENT INPUT AND OUTPUT PROCEDURES (POLAR OR RECTANGULAR) AS THE OTHER PROGRAMS OF THE SET AND FEATURES SIMILAR SAFEGUARDS AGAINST IMPROPER HANDLING (A IS ALSO CALLED ABCD -, CHAIN - OR CASCADING MATRIX).

224PROGRAM STEPS
GEORGE W EPPRECHT

60405D (CONTD)

CH - ZURICH

60406D 67-97-TWOPORT TRANSMISSION - TO SCATTERING MATRIX CONVERSION

THE PROGRAM CONVERTS A TWOPORT TRANSMISSION MATRIX A (ALSO CALLED ABCD - OR CHAIN-MATRIX) TO ITS NORMALIZED FORM A'. FROM THIS THE SCATTERING MATRIX S MAY BE OBTAINED. CONVENIENT INPUT AND OUTPUT PROCEDURES ARE AVAILABLE FOR PARAMETERS IN RECTANGULAR OR POLAR FORM.
DATA EXCHANGE WITH OTHER PROGRAMS OF THE SET IS POSSIBLE. SAFEGUARDS AGAINST IMPROPER HANDLING ARE PROVIDED.

224PROGRAM STEPS
GEORGE W EPPRECHT
CH - ZURICH

60407D 67-LIGHTING INTENSITY IN DEPENDENCE OF HEIGHT

THIS PROGRAM CONVERTS THE LIGHTING INTENSITY OF LAMPS IN DIFFERENT HEIGHTS. THE INPUT DATA ARE THE ORIGINAL AND THE NEW HEIGHT OF THE LAMP, THE ORIGINAL LIGHTING INTENSITY, THE DISTANCE BETWEEN THE LAMPMAST AND THE POINT CORRESPONDING TO THE ORIGINAL LIGHTING INTENSITY. IT IS NO LUMINOUS INTENSITY REQUIRED. THE PROGRAM GENERATES A NEW LIGHTING INTENSITY DISTRIBUTION. IT IS MAINLY CREATED TO WRITE TABLES.

096PROGRAM STEPS
RALPH DIETER
D - WEINSTADT

60408D 67-BIORYTHMS DOUBLE CRITICAL/ MAXIMUM/MINIMUM DATES

PROGRAM QUICKLY CALCULATES DATES OF DOUBLE CRITICAL, DOUBLE MAXIMA AND DOUBLE MINIMA FOR EACH OF THE THREE BIORYTHM CYCLES OF 23- 28- 33-DAY CYCLES. IT WILL ALSO COMPUTE THE AMPLITUDES OF THE THREE CYCLES ON A GIVEN DATE, AND MAY BE USED AS A CALENDAR DATE/JULIAN DATE (AND VICEVERSA) "CONVERTER". DATA REQUIRED: CALENDAR DATES OF BIRTH AND ENQUIRY.

221PROGRAM STEPS
LAURENCE JAMES HILL
UK - EDINBURGH

60409D 67-PRIVATE BUDGET WATCHER

THIS PROGRAM STORES THE PERSONAL EXPENSES UP TO 9 CATEGORIES AND KEEPS THE BANK- AND CASH BALANCE ALWAYS IN THE ACTUAL COURSE. AFTER EVERY INPUT IT COMPARES THE SUM OF THE REAL EXPENSES OF THE CHOSEN CATEGORY WITH YOUR ESTIMATED EXPENSES AND WARNS YOU IF YOU HAVE EXCEEDED THE GIVEN LIMIT.
DISPLAY/PRINT - ROUTINES MAKE IT POSSIBLE TO RECALL ALL DATAS EASILY. PROGRAM AND DATAS CAN BE STORED ON THE SAME MAGNETIC CARD.

112PROGRAM STEPS
KLAUS HIPPMANN
D - REGENSBURG

60410D 67-DECOMPOSITION INTO PARTIAL FRACTIONS, PROGRAM 1

THIS PROGRAM PERFORMS DECOMPOSITION OF FRACTIONS WITH A SECOND DEGREE POLYNOMIAL AS THE DENOMINATOR. THE NUMERATOR POLYNOMIAL MAY BE OF ANY DEGREE. IF THE ROOTS OF THE DENOMINATOR ARE COMPLEX CONJUGATE, THIS PROGRAM GIVES THE REAL SOLUTION. TO FIND THE COMPLEX SOLUTION, USE PROGRAM 2.

209PROGRAM STEPS
BJORN ENGSIG

60410D (CONTD)

DK - ALLEROD

60411D 67-DECOMPOSITION INTO PARTIAL FRACTIONS, PROGRAM 2

THIS PROGRAM IS USED AFTER PROGRAM 1 IN CASES WHEN THE ROOTS OF THE DENOMINATOR ARE COMPLEX CONJUGATE. THIS PROGRAM THEN GIVES THE COMPLEX SOLUTION.

056PROGRAM STEPS
BJORN ENGSIG
DK - ALLEROD

60412D 67-STAR ENCOUNTER PREDICTIONS

THIS PROGRAM CALCULATES THE MINIMUM DISTANCE, THE NEW PROPER MOTION, THE NEW MAGNITUDE AND THE TIME WHEN A STAR WILL BE NEAREST THE SUN. THE ONLY DATA REQUIRED IS THE STAR'S PRESENT DISTANCE,ITS PROPER MOTION, ITS RADIAL VELOCITY AND ITS PRESENT MAGNITUDE.

074PROGRAM STEPS
CLAUDE COLLE
F - MONTPELLIER

60413D 67-PLANET LANDING SIMULATOR

THE PURPOSE OF THIS PROGRAM IS TO SET A LANDING MODULE (L.M.) ON A PLANET OR A SATELITE WITHIN A SHORT DISTANCE OF A TARGET DETERMINED BY THE PROGRAM, BURNING FUEL IN TWO DIRECTIONS (VERTICAL & HORIZONTAL) TO DO IT. BY CHANGING THE VALUE OF "G" (SURFACE GRAVITY) PROVIDED IN A TABLE, YOU CAN LAND ON ANY PLANET OF THE SOLAR SYSTEM, THUS PROVIDING HOURS OF ENTERTAINMENT.

211PROGRAM STEPS
CLAUDE COLLE
F - MONTPELLIER

60414D 67-SUMMATION PROGRAMS THAT USE ONLY THE STACK REGISTERS

3 PROGRAMS THAT USE ONLY THE STACK TO COMPUTE DIFFERENT SUMS.
1-COMPUTES THE SUMS OF XI (IN X-REG.) AND YI (IN Y-REG.).IF YOU PUT IN PAIRS OF VALUES XI/YI.
2-COMPUTES UP TO 3 DIFFERENT SUMS OF XI,YI AND ZI, IF THE VALUES XI RSP. YI RSP. ZI ARE PUT IN BY THE LABELS B RESP. C RESP. D. THE SUMS ARE IN THE X-,Y- RESP. Z-REGISTER.
3-COMPUTES THE SUMS OF XI,XI**2 AND N. AFTERWARDS THE ARITHMETIC MEAN STANDARD DEVIATION AND VARIATION COEFFICIENTS CAN BE COMPUTED.

106PROGRAM STEPS
FRANZ-JOSEF KALL
D - AACHEN-BROND

60415D 67-RANKING SPORT RESULTS

IN SOME KIND OF SPORT THE COMPETITORS DO NOT START SIMULTANEOUSLY OR AGAINST EACH OTHER, SO YOU CAN SEE IMMEDIATELY WHO WINS AND LOOSES. BUT THEY START ONE BY ONE AND THE RESULT OF EACH COMPETITOR IS MEASURED OR VALUED AFTER HIS PERFORMANCE. TO GET THE ACTUAL POSTITION OF THE LAST COMPETITOR, YOU MUST COMPARE HIS RESULT WITH THOSE OF ALL PRECEDING COMPETITORS. THE PROGRAM CAN ARRANGE THE RESULTS OF ANY NUMBER OF COMPETITORS IMMEDIATELY. IT CAN GIVE A LIST OF RESULTS FOR THE UP TO 23 BEST COMPETITORS.

223PROGRAM STEPS
FRANZ-JOSEF KALL
D - AACHEN-BRAND

60416D 67-BAIRSTOW 19

USING THE BAIRSTOW METHOD, THIS PROGRAM FINDS ALL ROOTS OF A

60416D (CONTD)

POLYNOMIAL OF DEGREE 1 TO 19. THE COEFFICIENTS OF THE POLYNOMIAL ARE REAL NUMBERS.

220PROGRAM STEPS
RAYMOND BROECKX
B - WILRIJK

60417D 67-POLYNOMIAL WITH GIVEN ROOTS

THIS PROGRAM FINDS THE REAL COEFFICIENTS OF A POLYNOMIAL WITH GIVEN REAL AND/OR COMPLEX ROOTS AND DEGREE UP TO 24.

103PROGRAM STEPS
RAYMOND BROECKX
B - WILRIJK

60418D 67-CHUKA

CHUKA IS A RUSSIAN GAME FOR ONE PERSON. STARTING WITH A SEQUENCE OF CUPS, FILLED WITH BUTTONS, AND AN EMPTY PURSE, ONE HAS TO MOVE THE BUTTONS, ACCORDING TO CERTAIN GIVEN RULES, WITH THE PURPOSE TO GET ALL OF THEM INTO THE PURSE.

142PROGRAM STEPS
RAYMOND BROECKX
B - WILRIJK

60419D 67-N-POINT LAGRANGIAN INTERPOLATION COEFFICIENTS

GIVEN A POSITIVE INTEGER NUMBER, THIS PROGRAM FIRST FINDS THE LOWEST AND HIGHEST SEQUENCE NUMBERS OF THE CORRESPONDING LAGRANGIAN INTERPOLATION COEFFICIENTS. NEXT, THE COEFFICIENTS THEMSELVES ARE CALCULATED FOR ANY ARGUMENT P FROM THE INTERPOLATION INTERVAL. THE CHOSEN N SHOULD BE LOWER THAN 70.

089PROGRAM STEPS
RAYMOND BROECKX
B - WILRIJK

60420D 67-N-POINT LAGRANGIAN INTERPOLATION

GIVEN A POSITIVE INTEGER, AT LEAST 2 AND AT MOST 18, AND THE ORDINATES FOR N EQUIDISTANT ABSCISSAS, AND THE FIRST ABSCISSA AND THE DIFFERENCE BETWEEN TWO CONSECUTIVE ABSCISSAS, THIS PROGRAM PERMITS AN N-POINT LAGRANGIAN INTERPOLATION.

162PROGRAM STEPS
RAYMOND BROECKX
B - WILRIJK

60421D 97-INITIAL VALUES FROM LAPLACE-TRANSFORMS

GIVEN A RATIONAL LAPLACE-TRANSFORM F(S) OF A TIME FUNCTION F(T), THE PROGRAM COMPUTES THE INITIAL VALUE F(0+) AND THE INITIAL VALUES OF ITS FIRST DERIVATIVES. THE ORDERS AND THE COEFFICIENTS OF THE DENOMINATOR AND NUMERATOR POLYNOMINALS HAVE TO BE PUT IN.

222PROGRAM STEPS
FRANK DQERRSCHEIDT
D - PADERBORN

60422D 67-SEMIGRAPHIC RESECTION

PROGRAM COMPUTES CO-ORDINATES OF UNKNOWN POINT FROM ANGLES TAKEN TO CO-ORDINATED STATIONS FROM UNKNOWN POINT.

274PROGRAM STEPS
LAURENCE APPLETON
UK - NORWICH NORFOLK

60423D 97-POLYNOMIAL EVALUATION HIGHEST GRADE LESS THAN 17

THIS PROGRAM COMPUTES A ROOT OF A POLYNOM IN A GIVEN OUT INTERVAL. AT

60423D (CONTD)

FIRST IT FIXES A CHANGING OF THE SIGN OF THE FUNCTION. IN THE NEIGHBOURHOOD OF THIS X THERE MUST BE A ROOT OF F(X). THIS ROOT WILL BE DETERMINED BY NEWTON'S APPROXIMATIONS METHOD. THIS PROGRAM ALLOWS TO COMPUTE POLYNOMS TILL THE GRADE OF SEVENTEEN.

166PROGRAM STEPS
ANDREAS LANDHAEUSSER
D - MEPPEN

60424D 67-ANALYSIS OF 2X2 TABLE Y2 OR FISHER'S EXACT TEST CONF LIMITS**

2X2 TABLES ARE OFTEN USED FOR ANALYSIS OF CLINICAL TRIALS. THIS PROGRAM CHOOSES EITHER Y**2 WITH YATES CORRECTION OR FISHER'S EXACT P ACCORDING TO SAMPLE SIZE. CONFIDENCE LIMITS FOR PERCENTAGE DIFFERENCE CAN BE OBTAINED AND TOCHERS MODIFICATION OF FISHER'S TEST APPLIED TO MARGINALLY SIGNIFICANT DATA.

222PROGRAM STEPS
HUGH DUDLEY
UK - LONDON

60425D 97-DISPERSION OF LOAD IN A TWO-WAY SLAB

ACCORDING TO GERMAN REGULATIONS DIN 1045, SECTION 20.1.5 THIS PROGRAM DETERMINES FOR A TWO-WAY SLAB SUPPORTED ON ALL FOUR EDGES THE INFLUENCE DIAGRAM AND THE DISPERSION OF LOAD FOR EACH SUPPORT. PROGRAM TAKES INTO CONSIDERATION ALL KINDS OF BEARINGS (RIGID AND/OR HINGED SUPPORTS).

224PROGRAM STEPS
CLAUS M DACHSELT
D - WITTEN-ANNEN

60426D 67-FIREPLACES DIMENSIONING ESTIMATE

GIVEN THE DIMENSIONS OF THE ROOM AND THE EXTERIOR WALLS, WINDOWS AND DOORS, THIS PROGRAM ESTIMATES THE TUPE AND CRITICAL DIMENSIONS OF A FIREPLACE PLACED IN THIS ROOM. ALSO OWES THE CROSS-SECTION OF THE CHIMNEY OF THREE MOST COMMON HEIGHTS.

222PROGRAM STEPS
JIMMY PLATONIS
GR - ATHENS

60427D 97-CENTRAL ORTHOGONAL RIGID FOOTING ECCENTRICALLY LOADED

PROGRAM COMPUTES DIMENSIONS, SOIL STRESSES,BENDING MOMENTS AND SHEARING FORCES OF A CENTRAL, RIGID, ORTHOGONAL FOOTING, LOADED WITH A LOAD P AND TWO MOMENTS M'X M'Y. FOOTING IS DESIGNED CENTRALLY (SYMMETRICALLY), BECAUSE MOMENTS M'X M'Y ARE ASSUMED TO ACT CLOCKWISE OR ANTICLOCKWISE AS IT HAPPENS DURING AN EARTHQUAKE. PROGRAM AUTOMATICALLY ROUNDS RESULTS IN DECADES OF CM.

220PROGRAM STEPS
ANASTASE ANTONOPOULOS
GR - ATHENS

60428D 67-97-FLAG TEST ROUTINE

THIS ROUTINE DISPLAYS (PRINT) TWO NUMBERS REPORTING STATE OF FLAGS. F2 AND F3 ARE EVENTUALLY RESTAURED. ALL REGISTERS, INCLUDED LAST X, ARE UNMODIFIED, EXCEPT T WHICH IS LOST. ONE LABEL USED ONLY ONCE.

022PROGRAM STEPS
JEAN THIBERGE
F - CHERBOURG

60429D 67-97-TWOPORT HYBRID TO SCATTERING MATRIX CONVERSION

60429D (CONTD)

THIS PROGRAM BELONGS TO A SET OF TWOPORT CONVERSION PROGRAMS. IT TRANSFORMS A HYBRID MATRIX H TO ITS NORMALIZED FORM H' AND THE CORRESPONDING SCATTERING MATRIX S. CONVENIENT INPUT AND OUTPUT PROCEDURES (IN RECTANGUALR OR POLAR FORM) ARE PROVIDED. THE PROGRAM INCLUDES SEVERAL SAFEGUARDS AGAINST IMPROPER HANDLING AND ALLOWS DATA EXCHANGE WITH THE OTHER PROGRAMS OF THIS FAMILY.

224PROGRAM STEPS
GEORGE W EPPRECHT
CH - ZURICH

60430D 67-97-TWOPORT SCATTERING - TO HYBRID MATRIX CONVERSION

THIS IS ONE OF A SET OF TWOPORT CONVERSION PROGRAMS. FOR A SCATTERING MATRIX S IT FINDS THE CORRESPONDING HYBRID MATRIX H AND ITS NORMALIZED FORM H'. IT FEATURES THE SAME CONVENIENT INPUT AND OUTPUT PROCEDURES (RECTANGULAR AND POLAR) AS ITS COMPANION PROGRAMS AND SIMILAR SAFEGUARDS AGAINST IMPROPER HANDLING. DATA MAY BE EXCHANGED WITH THE OTHER PROGRAMS BY USE OF MAGNETIC DATA CARDS.

224PROGRAM STEPS
GEORGE W EPPRECHT
CH - ZURICH

60431D 67-SHOCK SPECTRUM OF A RECTANGULAR IMPULSE WITH DAMPING

THIS PROGRAM COMPUTES THE SHOCK SPECTRUM I.E.:THE MAXIMUM DEVIATION OF A SINGLE DEGREE OF FREEDOM MASS-SPRING SYSTEM WITH OR WITHOUT DAMPING SUBMITTED TO A RECTANGULAR ACCELERATION WAVEFORM AT ANY GIVEN FREQUENCY AND DAMPING COEFFICIENT VALUE OR WITHIN ANY INTERVAL FOR ONE OR BOTH VARIABLES.

159PROGRAM STEPS
GRANIER PIERRE
F - VANVES

60432D 67-SHOCK SPECTRUM OF A HALF-SINEWAVE IMPULSE

THIS PROGRAM COMPUTES THE SHOCK SPECTRUM I.E.:THE MAXIMUM DEVIATION OF A SINGLE DEGREE OF FREEDOM MASS-SPRING SYSTEM WITHOUT DAMPING AND SUBMITTED TO A HALF SINEWAVE ACCELERATION WAVE-FORM AT ANY GIVEN FREQUENCY OR WITHIN ANY FREQUENCY INTERVAL.

132PROGRAM STEPS
GRANIER PIERRE
F - VANVES

60433D 67-LOGISTIC CURVE FITTING WITH UNLIMITED INPUT OF DATA POINTS

PROGRAM FITS A SET OF DATA POINTS TO A LOGISTIC CURVE
Y=A+B/1+CX EXP (-DT) THAT LIES BETWEEN LOWER AND UPPER LIMITS (FIXED BY USER) AND COMPUTES A,B, C,D, THE POINT OF INFLACTION, CHI SQUARE,THE CORRELATION COEFFICIENTS FOR LINEAR AND CURVLINEAR CORRELATION.

193PROGRAM STEPS
PETER WROBEL
D - FELLBACH

60434D 67-CONVERTING NUMBERS IN DIFFERENT NUMBER-SYSTEMS

THIS PROGRAM PERFORMS CONVERSION OF NUMBERS IN ANY X-SYSTEM INTO THE DECIMAL SYSTEM, INDICATES THE CORRESPONDING DECIMAL NUMBER AND CONTINUES CONVERSION INTO ANY Y-SYSTEM. FOR X>10 OR Y>10 TWO DIGITS OF THE INDICATOR REPRESENT

PROGRAM ABSTRACTS

60434D (CONTD)

ONE DIGIT OF THE NUMBER, E.G. IN HEXADECIMAL: 9¬=09;A¬=10;F¬=15.

094PROGRAM STEPS
PETER MARTIN
D - NUERNBERG

60435D 67-DIAM, SPEED, HEAD OF PIPES GIVEN HEAT FLOW, LIM. SPPED, LIN. LOSS

PROGRAM EVALUATES DIAMETER (NORMALISED), SPEED, HEAD LOSS OF HEATING PIPES WITH FITTINGS, GIVEN HEAT FLOW IN WATT OR KCAL/K, AND UPPER LIMITS OF SPEED (2M/S E.G.) AND LINEAR HEAD LOSS USING CCLEBROOK'S FORMULA FOR TRANSIENT ZONE AND A LAMINAR FORMULA IN LAMINAR ZONE (RE<2320). SOLUTION INSURES AGAINST TURBULENT FLOW.

219PROGRAM STEPS
WILLY DEGEEST
B - WEZEMBEEK-OPPEM

60436D 67-EIGHTEEN DIGIT RPN STACK

THIS PROGRAM ESTABLISHES A FOUR HIGH RPN STACK OF 18 DIGIT POSITIVE INTEGRAL NUMBERS. ARITHMETIC OPERATIONS ARE EXACT WITH SUMS OR PRODUCTS BEYOND 18 DIGITS AND REMAINDERS CALCULATED AND STORED. SUPPORTING OPERATIONS INCLUDE ENTER, STO, RCL EXCHANGE, ROLL UP, ROLL DOWN, AND DISPLAY. A WORKED EXAMPLE SHOWS CONTINUOUS LONG DIVISION AND THE INVERSE PROCESS CAN BE APPLIED TO MULTIPLICATION.

442PROGRAM STEPS
SIDNEY WALLACE ECKETT
UK - BUCKHURST HILL

60437D 67-REAL ESTATE ANALYSIS

PROGRAM GIVES A COMPLETE REAL ESTATE INVESTMENT ANALYSIS IN THREE CHAPTERS:
1. ANALYSIS OF THE PURCHASE (SUMMARY OF THE OFFERING)
2. PROJECTION OF N YEARS GIVEN CASH FLOWS AND TAXABLE INCOMES; ANALYSIS OF THE RESALE AFTER N YEARS.

596PROGRAM STEPS
CHRISTIAN H MARYSSAEL
B - BRUSSELS

60438D 67-DIFFERENCIAL PRESSURE IN CYLINDRICAL PIPE

THIS PROGRAM EVALUATES THE DIFFERENCIAL PRESSURE IN CYLINDRICAL PIPE OF INCOMPRESSIBLE FLOW. THIS DIFFERENCIAL PRESSURE IS CALCULATED ACCORDING TO CINEMATIC VISCOSITY, INLET DIAMETER OF PIPE AND FLOW OF LIQUID.

145PROGRAM STEPS
JOEL LELONG
F - AVON

60439D 67-BACKSCATTER FACTORS FOR SUPERFICIAL & ORTHOVOLTAGE X-RAYS

USING EMPIRICAL EQUATIONS, THE BACK SCATTER FACTOR (NEEDED IN RADIATION THERAPY CALCULATIONS) CAN BE DETERMINED FOR AN OPEN ENDED COLLIMATOR FOR A KNOWN FIELD SIZE EXPRESSED AS AREA/PERIMETER AND KNWON HALF VALUE LAYED EXPRESSED IN EITHER MILLIMETERS OF ALUMINIUM OR MILLIMETERS OF COPPER.

184PROGRAM STEPS
DON WREDE
SA - RIYADH

60440D 67-GEOCENTRIC COORDINATES OF PLANETS AND COMETS

PROGRAM COMPUTES THE GEOCENTRIC COORDINATES RIGHT ASCENSION AND

60440D (CONTD)

DECLINATION FOR ALL PLANETS, ASTEROIDS, AND PERIODIC COMETS. ALL REQUIRED ORBIT DATES FOR ALL PLANETS (REVISED FOR 1980.0) AND FOR COMET HALLEY 1985/86 ARE ENCLOSED.
PROGRAM COMPUTES WITHOUT REGARDS FOR PERTURBATIONS. ERRORS FOR LARGE PLANETS WITHIN +/-10 YEARS: LESS THAN +/-5 SEC IN R.A. RESP. +/-1' IN DECL. IN MORE THAN 95% OF ALL COMPUTATIONS.

173PROGRAM STEPS
LOTHAR BUETTNER
D - OBERHAUSEN

60441D 67-HELIOCENTRIC COORDINATES AND ELONGATIONS OF PLANETS

PROGRAM COMPUTES:1.THE HELIOCENTRIC COORDINATES LONGITUDE AND LATITUDE IN THE ECLIPTIC FOR ALL PLANETS, ASTEROIDS, AND PERIODIC COMETS;
2.THE ELONGATION OF THE OBJECT;
3.THE DATES OF THE MAXIMUM ELONGATIONS FOR THE INNER PLANTES RESP. OPPOSITIONS FOR THE OUTER PLANETS;
4.THE DATES FOR THE MINIMUM ELONGATIONS (=CONJUNCTIONS);
5.THE DISTANCES OF THE PLANETS AND THEIR ANGLE-DIAMETERS FROM THE EARTH. THE DESCRIPTION INCLUDES ALL REQUIRED ORBIT DATES FOR ALL PLANETS (REVISED FOR 1980.0.).

217PROGRAM STEPS
LOTHAR BUETTNER
D - OBERHAUSEN

60442D 97-INFLUENCE-LINES OF FIELD-MOMENTS -(MAXIMA)

THE PROGRAM IS A CONTINUATION OF PROGRAM NR 50368 D AND COMPUTES THE MAXIMUM ORDINATES OF THE INFLUENCE-LINES FOR FILED-MOMENTS IN THE CHOSEN POINTS. INFLUENCE-LINES CAN EASILY BE COMPLETED BY HAND-SKETCH.

223PROGRAM STEPS
BERNET HANSPETER
CH - ITTIGEN

60443D 67-MODEL RAILWAY LAYOUT

THIS PROGRAM CALCULATES THE LAYOUT OF A HORIZOTNAL MODEL RAILWAY TRACK IN COORDINATES.
REQUIRED INFORMATIONS ARE:
1. STARTING POINT
2. LENGTH STRAIGHT TRACK
3. RADII CURVES TO THE LEFT/RIGHT AND DEGREE OF TRACK

176PROGRAM STEPS
M HOOIJBERG
NL - GENDEREN

60444D 67-EDM-INFLUENCE OF GROUND REFLECTION

THE PROGRAM CALCULATES THE ALTITUDE H OF ANY POINT ALONG THE RAY PATH BETWEEN ELECTRONIC DISTANCE MEASUREMENT INSTRUMENTS, IT CALCULATES THE EXCESS LENGTH BETWEEN THE DIRECT AND THE REFLECTED RAY PATHS, THE REFLECTION ERROR DT AND DT MAX.

139PROGRAM STEPS
M HOOIJBERG
NL - GENDEREN

60445D 67-TRANSVERSE MERCATOR PROJECTION -(WGS-72)

THIS PROGRAM CONVERTS GEOGRAPHICAL COORDINATES (LATITUDE & LONGITUDE) TO AND FROM TRANSVERSE MERCATOR COORDINATES (EASTINGS & NORTHINGS), CONVERGENCE AND SCALE FACTOR FOR THE WGS-72 SHPERCID.

443PROGRAM STEPS
M HOOIJBERG

60445D (CONTD)

NL - GENDEREN

60446D 67-97-TWOPORT MATRIX OPERATIONS I

PROGRAM IS COMPATIBLE WITH THE ASSOCIATED SET OF TWOPORT MATRIX CONVERSION PROGRAMS. IT ADDS OR MULTIPLIES 2 COMPLEX 2X2 MATRICES AFTER CHECKING WHETHER THEY ARE OF THE SAME TYPE. THESE OPERATIONS ALLOW CALCULATING THE MATRICES OF SERIES-,PARALLEL-,SERIES/PARALLEL- AND CASCADE CONNECTED TWOPORTS. IN ADDITION TO THE STANDARD INPUT AND OUTPUT FACILITIES OF THE PROGRAMSET IT FEATURES A LOGARITHMIC OUTPUT FORMAT (IN DB AND DEGREES).

224PROGRAM STEPS
GEORGE EPPRECHT
CH - ZURICH

60447D 97-67-TWOPORT MATRIX OPERATIONS II

THIS PROGRAM IS COMPATIBLE WITH THE SERIES OF MATRIX CONVERSION PROGRAMS AND SOLVES THE FOLLOWING PROBLEMS:A) INVERSION OF A COMPLEX TWOPORT MATRIX OR SINGLE COMPLEX VALUE
B) CROSS EXCHANGE OF A MATRIX (TO FIND MATRIX OF REVERSED TWOPORT)
C) CALCULATION OF INPUT IMPEDANCE, ADMITTANCE OR REFLECTION FACTOR WITH A GIVEN LOAD
D) CALCULATION OF THE DETERMINANT OF A COMPLEX 2 BY 2 MATRIX
F) INPUT, STORAGE AND DISPLAY (RECTANGULAR OR POLAR) OF COMPLEX TWOPORT MATRICES.

220PROGRAM STEPS
GEORGE W EPPRECHT
CH - ZURICH

60448D 67-97-TWOPORT SCATTERING - TO POWER MATRIX CONVERSION

THIS PROGRAM CALCULATES THE WAVE POWER MATRIX P FROM A GIVEN TWOPORT SCATTERING MATRIX S. IT AUTOMATICALLY DETERMINES WHETHER THE TWOPORT IS PASSIVE, LOSSLESS OR ACTIVE AND CALCULATES THE POWER OBSORBED BY THE TWOPORT FOR GIVEN INCIDENT WAVES. IT IS COMPATIBLE WITH AND EXHIBITS SIMILAR FEATURES AS THE ASSOCIATED TWOPORT MATRIX CONVERSION PROGRAMS.

224PROGRAM STEPS
GEORGE W EPPRECHT
CH - ZURICH

60449D 67-97-TWOPORT TRANSFER - TO TRANSMISSION - MATRIX CONVERSION

THIS PROGRAM CONVERTS TWOPORT TRANSMISSION MATRICES (ABCD-MATRIX) TO TRANSFER MATRICES (WAVE MATRIX -T) AND VICE VERSA. IT ALSO NORMALIZES AND DENORMALIZES A TRANSMISSION MATRIX WITH EQUAL OR DIFFERENT REFERENCE IMPEDANCES. CONVENIENT INPUT AND OUTPUT PROCEDURES ARE PROVIDED FOR RECTANGULAR OR POLAR PARAMETERS. THE PROGRAM IS ONE OF A SET OF PROGRAMS WHICH ALLOW CONVERSION BETWEEN ALL COMMONLY USED MATRIX TYPES.

223PROGRAM STEPS
GEORGE W EPPRECHT
CH - ZURICH

60450D 67-WEEKENDS BETWEEN DATES

GIVEN TWO DATES, THIS PROGRAM EVALUATES AND OUTPUTS IN MM.DDYYYY FORMAT ALL SATURDAYS AND SUNDAYS BETWEEN THE GIVEN DATES, ALSO THE CALENDAR AND THE WORKING DAYS. THE USER CAN OMIT EVALUATION, DISPLAY AND COUNTING OF SATURDAYS.

218PROGRAM STEPS
JIMMY PLATONIS
GR - ATHENS

PROGRAM ABSTRACTS

60451D 67-DETERMINATION OF MAGNETIC MOMENTS BY THE GOUY METHOD

THE AVERAGE MAGNETIC SUSCEPTIBILITY PER GRAM, THE MAGNETIC MOMENT IN BOHR MAGNETONS, AND THE NUMBER OF UNPAIRED ELECTRONS OF UP TO SEVEN COMPOUNDS, ARE CALCULATED FROM TWO READINGS (FOR EACH COMPOUND) AT ONE TEMPERATURE BUT AT DIFFERENT FIELD STRENGHTS. PROPER PROGRAM SEQUENCE IS ASSURED BY USE OF THREE SOFTWARE FLAGS. MOLECULAR WEIGHTS AND DIAMAGNETIC CORRECTIONS FOR UP TO FOURTEEN COMPOUNDS, AND THREE CONSTANTS REQUIRED FOR THE PROGRAM MAY BE STORED ON ONE DATA CARD.

224PROGRAM STEPS
A P STORACE
M - MSIDA

60452D 67-TWO SOFTWARE FLAG OPTIONS

TWO BASIC OPTIONS,WITH SF,CF AND F? FACILITIES FOR UP TO 10 SOFTWARE FLAGS IN ONE REGISTER ARE GIVEN. EACH BASIC OPTION IS OFFERED IN SEVERAL VARIATIONS THE SHORTEST OF WHICH IS OF 34 STEPS. A ROUTINE IS GIVEN FOR AN ERROR INDICATION (FLASHING X) WHEN FLAG X IS CLEAR. THE USER CAN CHOOSE FROM THE VARIOUS ROUTINES ACCORDING TO HIS REQUIREMENTS AND AVAILABLE SPACE IN HIS PROGRAM.

118PROGRAM STEPS
A P STORACE
M - MSIDA

60453D 67-ELLIPTIC LOWPASS FILTER DESIGN

PROGRAM FINDS THE MIN. DEGREE N OF AN ELLIP. LOWPASS FILTER THAT MEETS THE STANDARD REQUIREMENTS AMAX,AMIN FB,FH (87 SEC). FOR N<=30, IT ALSO FINDS & STORES THE ZEROS & POLES OF ATTENUATION (7 SEC PER DEG) AND CAN BE USED TO FIND THE LOSS AT ANY FREQUENCY (2 SEC PER DEG), EITHER MANUAL. OR AUTOMATICALLY CHOSING BET. LINEAR OR LOGARITH. SWEEP (CARD 2). ROUTINES FOR COMP. OF ELLIP. SINE SN (U,K) (11 SEC) & COMPL. ELLIP. INTEGRAL OF THE 1ST KIND (22 SEC) ARE AVAILABLE. ACCUR. IS 8 DEC. OR BETTER. (10 PAGES)

332PROGRAM STEPS
VALENTIN ALBILLO
E - MADRID

60454D 67-FACTORS OF A NUMBER: THE FASTEST PROGRAM ON THE SUBJECT

GIVEN A POSIT. INTEG. N, PROGRAM FINDS & PRINTS ALL ITS FACTORS. IT IS SPECIALLY DESIGNED TO TEST IF N IS A PRIME IN THE MIN. POSSIBLE AMOUNT OF TIME. IN FACT, MAX. TIMES ARE (IF N IS PRIME OR THE SQUARE OF A PRIME): N<10**1=3 SEC., N<10**2= =4 SEC; N<10**3=9 SEC., N<10**4=20 SEC., N<10**5=57 SEC, N<10**6= 2M 46S., N<10**7=8M 55S., N<10**8= 28M 6S. NO DATA CARDS REQUIRED. USER MAY BE ABSENT WHILE PROGRAM RUNS. A SIMPLER ROUTINE 52 STEPS LONG & SLOWER INCLUDED. FULLY DOCUMENTED (7 PAGES).

136PROGRAM STEPS
VALENTIN ALBILLO
E - MADRID

60455D 67-PETROL AND OIL CONSUMPTION CONVERSIONS

THIS PROGRAM CONVERTS PETROL (GAS) CONSUMPTION FIGURES FROM MILES PER GALLON TO LITRES/100 KM AND VICE VERSA, MPG TO KM/LITRE AND VICE VERSA, OIL CONSUMPTION OF ENGINES FROM MILES PER QUART TO LITRES PER 1000 KM - ALL ABOVE WITH CONVERSION OPTION OF BRITISH (IMPERIAL) AND US GALLONS (OR QUARTS). THERE IS ALSO A DIRECT CONVERSION FROM MILES PER BRITISH GALLON TO MILES PER US

60455D (CONTD)

GALLON AND VICE VERSA.

091PROGRAM STEPS
L ANDREW MANNHEIM
UK - RICHMOND

60456D 67-BRITISH VALUE-ADDED TAX RETURN (VAT)

THIS PROGRAM KEEPS TRACK OF VALUE-ADDED TAX (VAT) ACCOUNTING FOR THE CURRENT BRITISH SYSTEM. OUTPUTS (SALES) AND INPUTS (EXPENSES) CAN BE ENTERED WITH UP TO 3 VAT % RATES OR AS SEPARATE AMOUNTS+TAX. AT THE END OF ACCOUNTING PERIOD THE PROGRAM PRINTS OUT IN SEQUENCE THE VALUES TO BE ENTERED IN THE BOXES OF THE VAT RETURN FORM. PARTIAL ACCOUNTING STATE CAN BE STORED ON DATA CARD FOR RESUMPTION AT ANY LATER STAGE.

168PROGRAM STEPS
L ANDREW MANNHEIM
UK - RICHMOND

60457D 67-PHOTOGRAPHIC LENS RESOLUTION PARAMETERS

THERE ARE THEORETICAL LIMITS TO THE RESOLUTION PERFORMANCE OF PHOTOGRAPHIC LENSES, DETERMINED BY APERTURE, IMAGE SCALE AND OTHER FACTORS.THIS PROGRAM CALCULATES THE LIMITING RESOLUTION OF A LENS FOR A GIVEN APERTURE AND IMAGE SCALE, AND THE LIMITING APERTURE FOR A GIVEN RESOLUTION STANDARD. IT FURTHER INCLUDES INTERCONVERSIONS BETWEEN F-STOP AND NUMERICAL APERTURE PLUS OPTIONS OF DIFFERENT LIGHT WAVELENGTHS AND REPRODUCTION SCALES.

105PROGRAM STEPS
L ANDREW MANNHEIM
UK - RICHMOND

60458D 67-DEPTH OF FIELD-1:NORMAL DISTANCE RANGE

FOR A LENS OF A GIVEN APERTURE AND FOCAL LENGTH,THE PROGRAM CALCULATES
A. NEAR AND DISTANT LIMITS OF THE ACCEPTABLY SHARP ZONE AT DIFFERENT SUBJECT DISTANCES;
B. REQUIRED FOCUS DISTANCE AND APERTURE FOR A GIVEN SHARP ZONE;
C. AUTOMATICALLY TABULATED NEAR AND FAR SHARPNESS LIMITS FOR A RANGE OF LENS APERTURES.
INPUT AND OUTPUT OPTIONS: METERS/FEET, DISTANCES FROM LENS OR FILM PLANE ETC. SPECIAL INFINITY OVERFLOW DISPLAY WITHOUT ARRESTING PROGRAM.

218PROGRAM STEPS
L ANDREW MANNHEIM
UK - RICHMOND

60459D 67-COSINE LAW LIGHT FALL-OFF

IMAGES PROJECTED BY LENSES ARE BRIGHTER IN THE CENTRE THAN AT THE EDGES. THIS LIGHT FALL-OFF DEPENDS ON IMAGE FORMAT AND FOCAL LENGTH AND FOLLOWS A COS**P FUNCTION,WHERE P USUALLY = 4.
THIS PROGRAM CALCULATES:
A. THE LIGHT FALL-OFF IN LENS STOPS AND EQUIVALENT % BRIGHTNESS FOR P=4 OR ANY OTHER VALUE;
B. P FOR A GIVEN LIGHT FALL-OFF AND FOCAL LENGTH;
C. ANGLE OF VIEW FOR A GIVEN DIMENSION AND FOCAL LENGTH.

110PROGRAM STEPS
L ANDREW MANNHEIM
UK - RICHMOND

60460D 67-LENGTH OF A CURVE

THIS PROGRAM SOLVES THE PROBLEM OF CALCULATING THE LENGTH OF ANY CONTINUAL FUNCTION BY AN APPROXIMATION METHOD. THERE ARE 14 LABELS,

60460D (CONTD)

15 REGISTERS (INCLUDING THE I-REG.) AND 178 STEPS OF PROGRAM MEMORY FOR THE USER AVAILABLE.

046PROGRAM STEPS
RALPH DIETER
D - WEINSTADT

60461D 67-MASTERMIND - PRIMES - GCD, LCM - DAY OF WEEK (JUL./GREG. CALENDARS)

THIS MASTER PROGRAM OF A SET CAN PLAY CODER IN MASTERMIND OR FIND:
-PRIME FACTORS AND EXPONENTS OF A NUMBER (200003 PRIME IN 86 SEC)
-DOW OF A DATE (JUL./GREG. CALEND)
-GCD AND LCM OF TWO NUMBERS.
MASTERMIND GAME (LENGTH & FIGURES UP TO 9) MAY BE GIVEN UP FOR OTHER PROBLEMS THEN RESUMED; FAST ANSWER. THIS DEMONSTRATION CARD INCLUDES A MRG-PSE LOOP AFTER MASTERMIND AND PRIMES.

213PROGRAM STEPS
JEAN THIBERGE
F - CHERBOURG

60462D 67-(MASTERMIND - PRIMES) QUAD. EQ., 2X2 LIN. SYSTEM - CONTINUED FRACTN.

IN FACT TWO HALF-CARD PROGRAMS:
-QUADRATIC EQUATION, 2X2 MATRIX INVERSION & LIN. SYSTEMS (74 STEPS)
-CONTINUED FRACTION: DECIMAL TO FRACTION AND TERMS TO DECIMAL AND FRACTION (72 STEPS)
EACH PROGRAM IS A WHOLE, BUT CAN ALSO BE MERGED IN PROGRAM ....D WITH MASTERMIND AND PRIME FACTORS.

146PROGRAM STEPS
JEAN THIBERGE
F - CHERBOURG

60463D 67-(MASTERMIND - PRIMES) CURVE FITTING - MOMENTS,SKEWNESS,KURTOSIS

IN FACT TWO HALF-CARD PROGRAMS:
-CURVE FITTING (4 BASIC CURVES) (83 STEPS). TYPE OF CURVE SELECTED BY ITS NUMBER; ESTIMATION Y(X) AND X(Y).
-MOMENTS, SKEWNESS & KURTOSIS COEF. (72 STEPS)
EACH PROGRAM IS A WHOLE, BUT CAN ALSO BE MERGED IN PROGRAM .....D WITH MASTERMIND AND PRIME FACTORS.

155PROGRAM STEPS
JEAN THIBERGE
F - CHERBOURG

60464D 67-(MASTERMIND - PRIMES) EASTER - SUNRISE AND SUNSET, TRANSIT

IN FACT TWO HALF-CARD PROGRAMS:
-EASTER (JULIAN/GREGORIAN) DATE WITH EXACT FORMULAS (83 STEPS);
-SUNRISE AND SUNSET: GIVEN PLACE, TIME ZONE THEN DATE, PROGRAM GIVES TIME OF TRANSIT & SUNRISE OR SUNSET WITH ABOUT 3 MINUTES ACCURACY AT LONDON LATITUDE (83 STEPS)
EACH PROGRAM IS A WHOLE; BUT CAN ALSO BE MERGED IN PROGRAM .....D WITH MASTERMIND AND PRIME FACTORS.

166PROGRAM STEPS
JEAN THIBERGE
F - CHERBOURG

60465D 67-DIMENSIONING RC-BEAM WITH RECTANGULAR SECTION

CALCULATION OF MIN REQ'D REINFORCEMENT FOR BOTH,PURE BENDING AND COMBINED LOAD. (MOMENT & AXIAL LOAD), ACCORDING DIN 1045 (1972), RESP. DIN 4224 (HEFT 220), DETERMIN. OF SINGLE & DOUBLE REINFORC. AND % OF REBAR. AXIAL LOAD MAY BE TENSION OR COMPRESSION.PROGRAM ALSO GIVES A SOLUTION FOR ENTIRE SECTION UNDER TENSION (TENSILE LOAD WITH SMALL EXCENTRICITY). VARIATIONS OF SAFETY FACTOR, CHARACTERISTIC CONCRETE STRENGTH & YIELD STRN.OF REINFORCM.

60465D (CONTD)

ALLOW APPLIC. FOR ANY NATIONAL CONCRETE CODE - ULTIMATE STRN. DESIGN.

202PROGRAM STEPS
FRITZ OTTO GOEDICKE
D - KAARST

60466D 67-SPREAD FOOTINGS; CALCULATION OF MAX. SOIL PRESSURE

CALCULATION OF MAX. SOIL PRESSURE OF SPREAD FOOTINGS WITH RECTANGULAR FOUNDATION SLAB UNDER BIAXIAL HORIZONTAL LOAD. CONDTION: MIN. 50% OF FOUNDATION UNDER COMPRESSION I.E.: MIN.SAFETY FACTOR AGAINST OVERTURNING EQUALS 1.5.IF THIS CONDITION IS NOT MET DISPLAY WILL SHOW AN ERROR MESSAGE, THUS INDICATING FOUNDATION DIMENSIONS HAVE TO BE ENLARGED.COMFORTABLE FACILITIES FOR REDESIGN WITH MODIFIED DIMENSIONS, THUS ALLOWING AN OPTIMAL SOLUTION WITH MIN. DIMENSIONS OF THE FOUNDATION SLAB.

289PROGRAM STEPS
FRITZ OTTO GOEDICKE
D - KAARST

60467D 67-SIMPLE PROPORTIONS

WITH THIS SHORT PROGRAM ONE CAN SOLVE FOR THE MISSING FORTH OF THE ARITHMETIC PROPORTION A/B=C/D. INPUT ANY 3 OF THEM AND PROGRAM OUTPUTS THE UNKNOWN AND CHECKS FOR THE FITTNESS OF THE FORMED RELATION. EXECUTION IS COMPLETELY AUTOMATIC AND DISPLAY CAN BE REPEATED AT WILL

093PROGRAM STEPS
JIMMY PLATONIS
GR - ATHENS

60468D 67-MULTIPLE LINEAR REGRESSION ANALYSIS

A RECURSIVE LEAST-SQUARES PROCEDURE IS USED TO ESTIMATE THE PARAMETERS IN A LINEAR MODEL WITH THREE INDEPENDENT VARIABLES AND FOUR PARAMETERS OR LESS. UNLINEAR FUNCTIONS FOR THE INDEPENDENT VARIABLES CAN DIRECTLY BE USED BY ADDING SOME PROGRAM STEPS TO THE GIVEN PROGRAM. THERE ARE NO LIMITS FOR THE NUMBER OF OBSERVATIONS AND DUE TO THE RECURSIVE PROCEDURE PARAMETER ESTIMATES CAN BE ACHIEVED AFTER EACH OBSERVATION. FOR STATISTICAL ANALYSIS OF THE OBTAINED MODEL THE PROGR. 60469 CAN DIRECTLY BE USED.

208PROGRAM STEPS
KARL TAPIO WESTERLUND
F - ABO

60469D 67-STATISTICS FOR MULTIPLE LINEAR REGRESSION ANALYSIS

THE PROGRAM IS A DIRECT CONTINUATION OF THE PROGRAM 60468. THE PROGRAM GIVES A TOTAL STATISTICAL ANALYSIS TO THE OBTAINED REGRESSION MODEL CONTAINING: DEGREES OF FREE COM, MULTIPLE CORRELATION COEFFICIENT, RESIDUAL VARIANCE, TOATAL F-VALUE, STANDARD DEVIATIONS FOR THE ESTIMATED REGRESSION PARAMETERS AND CORRESPONDING PARTIAL F-VALUES.

210PROGRAM STEPS
KARL TAPIO WESTERLUND
F - ABO

60470D 97-ANALYSIS OF PERSONAL FINANCES

ALLOWS PROJECTING INDIVIDUAL FINANCIAL SITUATIONS INTO FUTURE. MOST USEFUL FOR PERSON APPROACHING RETIREMENT. TAKES INTO CONSIDERATION ESTIMATED FUTURE INFLATION AND INTEREST-EARNING RATES. INPUTS, RELATED TO BASE YEAR, ARE SAVINGS ON HAND, ANNUAL INCOME, ANNUAL NEEDS, PLUS SIX SPECIFIC PAYMENTS WHICH

60470D (CONTD)

MAY BE OF SIX TYPES: A) ONE TIME; B) BEGINNING SOME FUTURE YEAR; C) STOPPING SOME FUTURE YEAR;EACH BEING EITHER "FIXED",OR "INFLATION-COMPENSATED".

210PROGRAM STEPS
WALTER H OETTINGER
A - VIENNA

60471D 97-CH= COMPLETE HOROSCOPE (EPHEMERIS, HOUSES, ASPECTARIAN) CARD 1

CARD 1 OF A SERIES OUT OF 12 CARDS COMPUTES BASIC DATA NECESSARY FOR FURTHER COMPUTATIONS (EPHEMERIS DATA OF SUN, MOON AND PLANETS FOR A.D. AND B.C. DATES). THE WHOLE SERIES OF 12 CARDS COMPUTE A COMPLETE HOROSCOPE ENCLUDING DATA LIKE LONGITUDE, SIGN, DAILY MOTION, LATITUDE, DISTANCE (ASTRONOMICAL UNITS AND PERCENTS) OF SUN, MOON, NODE AND PLANETS, CUSPS OF HOUSES (GOH. DR W KOCH METHOD), INVERTING POINT, DEAD POINT AND ASPECTARIAN WITHIN ORB (ADDED PERCENT VALUES).

224PROGRAM STEPS
WERNER POPP
D - GETTORF

60472D 97-CH= COMPLETE HOROSCOPE (EPHEMERIS, HOUSES, ASPECTARIAN) CARD 2

CARD 2 OF A SERIES OUT OF 12 CARDS CONTINUES COMPUTING BASIC DATA NECESSARY FOR FURTHER COMPUTATIONS (EPHEMERIS DATA OF SUN, MOON AND PLANETS FOR A.D. AND B.C. DATES). THE WHOLE SERIES COMPUTE A COMPLETE HOROSCOPE ENCLUDING DATA LIKE LONGITUDE, SIGN, DAILY MOTION, LATITUDE, DISTANCE (ASTRONOMICAL UNITS AND PERCENTS) OF SUN, MOON, (GOH. DR W KOCH METHOD), INVERTING POINT, DEAD POINT AND ASPECTARIAN WITHIN ORB (ADDED PERCENT VALUES).

223PROGRAM STEPS
WERNER POPP
D - GETTORF

60473D 67-97-CH= COMPLETE HOROSCOPE (EPHEMERIS, HOUSES, ASPECTARIAN) CARD 3

CARD 3 OF A SERIES OUT OF 12 CARDS CONTINUES COMPUTING BASIC DATA NECESSARY FOR FURTHER COMPUTATIONS (EPHEMERIS DATA OF SUN, MOON AND PLANETS FOR A.D. AND B.C. DATES). THE WHOLE SERIES COMPUTES A COMPLETE HOROSCOPE ENCLUDING DATA LIKE LONGITUDE, SIGN, DAILY MOTION LATITUDE, DISTANCE (ASTRONOMICAL UNITS AND PERCENTS) OF SUN, MOON, NODE AND PLANETS, CUSPS OF HOUSES (GOH, DR W KOCH METHOD) INVERTING POINT, DEAD POINT AND ASPECTARIAN WITHIN ORB (ADDED PERCENT VALUES)

177PROGRAM STEPS
WERNER POPP
D - GETTORF

60474D 67-SOLVING MASTERMIND WITH HP 67/97

WITH THIS PROGRAM YOUR HP FINDS EVERY NUMBER BETWEEN 1111 AND 6666 IN ABOUT 6 GUESSES. YOU HAVE TO TELL THE CALCULATOR HOW MANY DIGITS OF ITS GUESS ARE IN THE CORRECT POSITION (BLACK KEY PEGS) AND IN THE INCORRECT POSITION (WHITE KEY PEGS).

220PROGRAM STEPS
MARTIN SCHMITT
CH - EMMENBRUECKE

60475D 97-NETWORK, CRITICAL PATH

PROGRAM FINDS CRITICAL PATH-EITHER MAXIMUM OR MINIMUM IN AN ACYCLIC NETWORK OF MAXIMUM 23 NODES. 112 STEPS ARE AVAILABLE TO PROGRAM NETWORK FUNCTON.

60475D (CONTD)

110PROGRAM STEPS
BART ONKENHOUT
NL - BLARICUM

60476D 97-COMPANY GROWTH

THIS PROGRAM IS DESIGNED TO RUN AFTER "COMPANY ANALYSIS". IT EVALUATES THE EFFECT OF TURNOVER AND/OR WAGE INCREASES ON BALANCE SHEET AND PROFIT AND LOSS ACCOUNT. THE EFFECT OF RATIO CHANGES (DAYS, STOCK ETC) CAN ALSO BE CALCULATED, AS CAN THE TURNOVER INCREASE REQUIRED TO REACH A SPECIFIED NET PROFIT.

224PROGRAM STEPS
BART ONKENHOUT
NL - BLARICUM

60477D 97-COMPANY ANALYSIS

THIS PROGRAM CALCULATES THE VARIOUS RATIO'S NORMALLY USED FOR AN ANALYSIS OF A COMPANY'S BALANCE SHEET AND PROFIT AND LOSS ACCOUNT ROGRAM CAN BE FOLLOWED BY PROGRAM "COMPANY GROWTH"-60476 D.

222PROGRAM STEPS
BART ONKENHOUT
NL - BLARICUM

60478D 97-TARGET FINANCE STRUCTURE

PROGRAM CALCULATES OPTIMAL THEORETICAL FINANCE STRUCTURE OF A COMPANY. CERTAIN ASSUMPTIONS ARE MADE AS TO PERCENTAGE TO BE FINANCED BY EQUITY, LONG TERM DEBT AND SHORT TERM DEBT FOR EACH CATEGORY OF ASSETS. FROM THE IDEAL FINANCE STRUCTURE THE REQUIRED PROFIT CAN BE CALCULATED.

224PROGRAM STEPS
BART ONKENHOUT
NL - BLARICUM

60479D 97-SEASON ANALYSIS

PROGRAM WILL CALCULATE AVERAGE SEASONAL VARIATION FROM A - LINEAR OR EXPONENTIAL - TREND LINE, GIVEN A SET OF DATA. CYCLE LENGTH IS MAX. 12, NUMBER OF CYCLES IS UNLIMITED. FORECASTS, CORRECTED FOR SEASON, AND IF REQUIRED, FOR BOOM/RECESSION FACTOR CAN BE PRINTED OUT.

202PROGRAM STEPS
BART ONKENHOUT
NL - BLARICUM

60480D 97-EXPONENTIAL SMOOTHING SINGLE, DOUBLE, TRIPLE

GIVEN INPUT OF ALPHA PROGRAM PERFORMS SINGLE, DOUBLE OR TRIPLE EXPONENTIAL SMOOTHING. INPUT CAN BE DATA POINTS OR PREVIOUSLY RECORDED SMOOTHED VALUES.

221PROGRAM STEPS
BART ONKENHOUT
NL - BLARICUM

60481D 97-CURVE FITTING BY POLYNOM OF 5TH ORDER

PROGRAM APPROXIMATES GIVEN VALUES IN A SYSTEM OF LINEAR COORDINATES TO A POLYNOMIAL FUNCTION OF DEGREE 5. TO RUN THE PROGRAM YOU NEED PROGRAM NUMBER 60484 D : 6X6 MATRIX OPERATIONS.

224PROGRAM STEPS
GEORG RAABE
D - BRAUNSCHWEIG

60482D 97-SOIL STRESS PART 1, AREA LOAD, POINT LOAD, LINEAR LOAD

PROGRAM ABSTRACTS

60482D (CONTD)

PROGRAM CALCULATES FOR SHALLOW FOUNDATION THE SOIL STRESS FOR
1. AREA LOAD
2. POINT LOAD
3. LINEAR LOAD
(SEE DIN 4019 BLATT)
FOR AREA LOAD THE FOUNDATION IS RECTANGULAR; THE SOIL STRESS MAY BE CALCULATED AT ANY POINT OF THE FOUNDATION. POINT LOAD AND LINEAR LOAD MAY ALSO BE USED FOR PILE FOUNDATION OR A PILE WALL.

186PROGRAM STEPS
GEORG RAABE
D - BRAUNSCHWEIG

60483D 97-SOIL STRESS PART 2, HORIZONTAL LOAD, TRIANGLE LOAD

PROGRAM CALCULATES FOR SHALLOW RECTANGULAR FOUNDATON FOR
1. TRIANGULAR VERTICAL LOAD (AREA)
2. HORIZONTAL RECTANGULAR ARE LOAD
3. TRIANGULAR HORIZONTAL AREA LOAD,
(SEE DIN 4019 BLATT 2)
THE SOIL STRESS AT A GIVEN LEVEL Z.

195PROGRAM STEPS
GEORG RAABE
D - BRAUNSCHWEIG

60484D 97-6X6 MATRIX OPERATIONS

PROGRAM CALCULATES THE INVERSE OF A SYMMETRIC 6X6 MATRIX, AND SOLVES A SYSTEM OF 6 SIMULTANEOUS EQUATIONS IN 6 UNKNOWNS, BY MULTIPLYING THE INVERSE MARTIX WITH A 6-ELEMENT-VECTOR.

640PROGRAM STEPS
GEORG RAABE
D - BRAUNSCHWEIG

60485D 67-REGRESSION PARABOLIC CURVES OF DEGREE 2,3 OR 4

THE PROGRAM COMPUTES THE COEFFICIENTS OF THE REGRESSION PARABOLA (OF DEGREE2,3 OR 4), FOR A GIVEN SET OF POINTS, AND ALSO THE PREDICTED VALUE Y(X). THE LEAST SQUARES METHOD, TOGETHER WITH CHEBICHEFF'S ORTHOGONAL POLYNOMIALS IS USED. THE PROGRAM HAS THE SAME PURPOSE AS THE ST1-14A (STAT PAC 1) BUT HERE THE POINTS ARE NOT NECESSARILY SPACED: SO THE PRESENT PROGRAM IS OF A MORE GENERAL USE.

443PROGRAM STEPS
JEAN BARFETY
F - LE RAINCY

60486D 97-BEND MOMENT DIAGRAM OF A CONT. BEAM'S SPAN-FRAME'S MEMBER

PROGRAM COMPUTES THE BENDING MOMENT AT ANY POINT OR GENERATES THE BENDING MOMENT DIAGRAM OF A CONTINUOUS BEAM'S SPAN OR FRAME'S MEMBER HAVING ONE BENDING MOMENT AT EACH END AND/OR UP TO FOUR POINT LOADS AND/OR UNIFORMELY DISTRIBUTED LOAD AND/OR SYMMETRIC TRAPEZOIDAL LOAD.

224PROGRAM STEPS
ANASTASE ANTONOPOULOS
GR - ATHENS

60487D 97-CURVE PLOTTER

THE PROGRAM GIVES A GRAPHICAL REPRESENTATION OF A FUNCTION F(X) FROM THE POSITON OF THE DECIMAL POINT IN THE PRINTOUT. THE MAXIMUM VALUE OF F(X) IS REPRESENTED BY 100 DIGITS. THE PROGRAM SCANS F(X) IN 10 STRIPS, FOR EACH VALUE OF X BETWEEN GIVEN LIMITS, AND PRINTS F(X) WHERE F(X) EQUALS THE NORMALIZED VALUE OF F(X) MULTIPLIED BY 100. THE GRAPH IS OBTAINED BY PLACING THE 10 STRIPS ABOVE EACH OTHER.

60487D (CONTD)

198PROGRAM STEPS
IAN V HANSFORD
UK - ALDERSHOT

60488D 67-HEAT LOSS FROM WALLS AND PIPES

PROGRAM COMPUTES THE HEAT LOSS AND COOL SURFACE TEMPERATURE OF MULTICOMPONENT WALLS, PLATES OR PIPES AT NEAR AMBIENT CONDITIONS. BRITISH OR S.I. UNITS.

217PROGRAM STEPS
JOHN DUNDERDALE
UK - GRIMSBY

60489D 67-PSYCROMETER/RELATIVE HUMIDITY

GIVEN THE TEMPERATURES OF DRY AND WET BULB THERMOMETERS, THIS PROGRAM CALCULATES:
1. THE REAL VAPOUR TENSION IN MILLIBAR
2. THE VAPOUR TENSION AT SATURATION
3. THE RELATIVE HUMIDITY IN PERCENT
4. THE GRAMS OF WATER CONTAINED IN 1 M 3 OF AIR AT TEST CONDITIONS
5. THE DEW POINT IN DEGREE CELSIUS

053PROGRAM STEPS
ARRIGO BOHM
I - TORINO

60490D 67-CALCULUS OF E

THIS PROGRAM COMPUTES THE 250 FIRST DIGITS OF E (2.71828...)

093PROGRAM STEPS
PIERRE MOLINARO
F - NANTES

60491D 67-POLYNOMIUAL REGRESSION DEGREE 1,2,3,4. PR 1234 DC 1234

THIS PROGRAM PERMITS TO COMPUTE THE BEST CURVE OF DEGREE 1 OR 2 OR 3 OR 4 GOING THROUGH N DATA PAIRS POINTS (PR 1234).
THE SECOND PROGRAM (DC 1234)PERMITS TO DRAW THE BEST CURVE OF DEGREE 1 OR 2 OR 3 OR 4.

224PROGRAM STEPS
JEAN-PIERRE ABRASSART
D - WALLDORF

60492D 67-BINARY ARITHMETICS II

WITH THE PROGRAM YOU CAN ADD, SUBTRACT, MULTIPLY AND DIVIDE TWO BINARY NUMBERS WITHOUT CONVERTING INTO DECIMAL SYSTEM.

220PROGRAM STEPS
REINHARD KLEINHANTZ
A - VIENNA

60493D 97-AUTOMATIC OR SELECTED CURVE FITTING

PART ONE - PROGRAM COMPUTES AT ONCE ALL NECESSARY SIGMAS (ENTERS NEGATIVE DATA). LAST DATA PAIR STORED.
PART TWO - COMPUTES, BY THE LEAST SQUARES METHOD, THE COEFFICIENT OF CORRELATION AND THE COEFFICIENTS A& B OF THE LINE OF REGRESSION / L.R., EXPONENTIAL, LOGARITHMIC AND POWER CURVES - SELECTED EITHER BY THE USER OR AUTOMATICALLY (IN LATTER CASE BEST CURVE FIT) - GIVES ESTIMATIONS Y(X) OR X(Y) - ALLOWS SOME PROGRAMMED TRANSFORMATIONS OF DATA.

207PROGRAM STEPS
JEAN THIBERGE
F - CHERBOURG

60494D 97-SIMPLIFIED GLASS ANNEALING SCHEDULES

USES A SIMPLE MODEL TO ESTIMATE THE MINIMUM TIME NEEDED TO ANNEAL

60494D (CONTD)

GLASSWARE BY HOLDING AT CONSTANT TEMPERATURE UNTIL STRESS IS NEGLIGIBLE THEN COOLING AT A CONSTANT RATE WHICH WILL LEAVE THE SPECIFIED RESIDUAL STRESS. ONCE THE GLASS IS SUFFICIENTLY RIGID COOLING RATE MAY BE INCREASED AND THE RELEVANT VALUES CAN BE CALCULATED. THE REQUIRED DATA FOR THE GLASS ARE THICKNESS, THERMAL EXPANSION AND TEMPERATURE FOR LOG VISCOSITY=13. OTHER PARAMETERS MAY BE SPECIFIED.

181PROGRAM STEPS
MICHAEL CABLE
UK - SHEFFIELD

60495D 67-BIORYTHMS DOUBLE AND TREBLE CRITICAL DAYS

GIVEN THE YEAR AND DAY OF THE YEAR OF DATE OF BIRTH, WITH YEAR AND DAY OF YEAR OF ENQUIRY, PROGRAM CALCULATES THE NEXT THREE DOUBLE CRITICAL DATES FOR EACH OF THE THREE PHYSICAL CYCLES OF 23 DAYS (PHYSICAL), 28 DAYS (EMOTIONAL) AND 33 DAYS (INTELLECTUAL).ADDITIONALLY IT WILL COMPUTE THE THREE TRIPLE CRITICAL DATES IN A PERSON'S LIFE.

179PROGRAM STEPS
LAURENCE HILL
UK - EDINBURGH

60496D 97-"NICE" GRAPH -PLOTTER UNLIMITED FORMATING

ENTERING UNLIMITED FORMAT M X N. THE PROGRAM GIVES A MAXIMUM - MINIMUM CONFINED GRAPH OF A 54 STEP-DEFINABLE FUNCTION IN A GIVEN INTERVAL A, B BY MEANS OF SEVERAL STRIPS. TWO MODES OF GRAHING ARE POSSIBLE. PROGRAM PRINTS MAXIMUM AND MINIMUM OF F, POSITION OF AXIS, UNITS AND STEP WIDTHS OF THE GRAPH.

170PROGRAM STEPS
MANOGG PETER
I - CASCIAGO

60497D 97-HISTOGRAM-PLOTTER

THE PROGRAM ALLOWS THE STORAGE OF UP TO 38 DIFFERENT FREQUENCY VALUES THEIR LISTING AND THE LISTING OF THEIR SUMS, THE CALCULATION OF THE TOTAL SUM, MEDIUM VALUE AND STANDARD DEVIATION, THE LISTING OF THE RELATIVE VALUES AND THEIR SUMS, AND THE GRAPHICAL REPRESENTATION IN A HISTOGRAM OF VIRTUALLY UNLIMITED FORMAT USING A SCANNING METHOD. A GROUPING OF INTERVALS IS POSSIBLE AS WELL AS A SCALE ADJUSTMENT. THE STORED VALUES ARE NOT CHANGED BY THE PROGRAM.

224PROGRAM STEPS
PETER MANOGG
I - CASCIAGO

60498D 67-ARMORED HP IS COMING

YOU HAVE ONLY ONE SECOND TO LOCATE THE TANK THAT TRIES TO ENTER IN "FORT CALCULATOR", YOU ARE DEFENDING, AND TO FIRE A MISSILE AT IT ,IT IS NOT EASY, BECAUSE THE MACHINE CAN MAKE EVASIVE MANOEUVRES WITH VARIABLE SPEED. THERE ARE ALSO 3 DIFFICULTY FACTORS AND SPECIAL RESULT DISPLAY CONTROL.

223PROGRAM STEPS
SPOLJARIC BRANKO
JU - ZAGREB

60499D 67-PERMANENT BANK SITUATION

THIS PROGRAM ENABLES YOU TO HAVE AT ANY TIME THE STATE OF YOUR BANK ACCOUNT. THE CARD HAS THE PROGRAM ON ONE SIDE AND VARIABLE DATA ON THE OTHER. IT ALSO KEEPS TRACK OF LAST EXPENSE, LAST RECEIPT, ACCOUNT NUMBER, LAST CHEQUE NUMBER .PROGRAM

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ALSO PROVIDES EASY ERROR RECOVERY - IT PREVENTS YOU FROM WRITING DOWN YOUR BANK OPERATIONS.

071PROGRAM STEPS
PHILIPPE ALLIAUME
F - TOURS

60500D 67-HORIZONTALLY LOADED PILES

PROGRAM CALCULATES DEFLECTION, SLOPE, SHEAR FORCE AND BENDING MOMENT OF VERTICAL PILES BEDDED IN THE SOIL. THE PILE MAY BE LOADED BY A HORIZONTAL FORCE AND/OR BY A BENDING MOMENT ON TOP. IT IS ASSUMED THAT THE CROSS SECTION OF THE PILE AS WELL AS THE COEFFICIENT OF HORIZONATAL SUBGRADE REACTION ARE CONSTANT ALONG THE PILE.

188PROGRAM STEPS
MARTIN BUETIKOFER
CH - THUN

60501D 67-CRAPS

HERE YOU PLAY CRAPS. YOUR WINNINGS WILL BE SHOWN AT THE END OF THE GAME.
MAXIMUM: 1 PLAYER

135PROGRAM STEPS
T-H RUESCH
D - LEONBERG

60502D 67-CURVE FITTING FOR GENERAL EXPONENTIAL AND POWER FUNCTION

PROGRAM FITS A SET OF DATA PAIRS TO GENERAL EXPONENTIAL CURVES AND GENERAL POWER CURES:
Y=D*EXP(B*X)+C AND Y=A*X**B+C
THE PROGRAM SD03A OF THE STANDARD PAC CAN BE ONLY APPLIED IN THIS SPECIAL CASE IF THE TERM C=0.

211PROGRAM STEPS
ANDRAS ILLYES
H - SZEKESFEHERVAR

60503D 67-INTERPOLATION OF A CURVE

THE PROGRAM WILL FIND THE WHOLE CIRCLE BEARINGS FROM THE INSTRUMENT STATION TO ANY POINT ON A CIRCULAR CURVE GIVEN THE STANDARD ARC, THE DEFLECTION ANGLE FOR THE STANDARD ARC, THE HAND OF THE CURVE, THE CHAINAGE OF THE INSTRUMENT STATION AND THE WHOLE CIRCLE BEARING OF THE TANGENT AT THE INSTRUMENT STATION.

129PROGRAM STEPS
MARK CRACKNELL
WAN - LAGOS

60504D 67-CURVE DESIGN

THE PROGRAM CALCULATES THE COORDINATES OF ANY POINT ON A CIRCULAR CURVE GIVEN THE FOLLOWING DATA. COORDINATES AND HAND OF CURVE, CHAINAGE AND COORDINATES OF ONE POINT ON THE CURVE. ROUTINES ARE ALSO PROVIDED TO CALCULATE THE WCB OF THE TANGENT, THE LINE FROM THE KNOWN PT TO THE NEW PT AND THE LINE FROM THE PREVIOUS NEW POINT TO THE LATEST NEW POINT.

168PROGRAM STEPS
MARK CRACKNELL
WAN - LAGOS

60505D 67-AREAS AND CENTROIDS BY ANGLES AND DISTANCES

THE PROGRAM CALCULATES THE AREAS AND CENTROID OF A SPACE SURROUNDED BY STRAIGHT LINES GIVEN OBSERVED BEARINGS AND DISTANCES TO THE CORNERS FROM A POINT EITHER INSIDE OR OUTSIDE THE AREA OR ON ITS PERIMETER. ALSO CALCULATES THE BEARING AND DISTANCE FROM THE POINT TO THE CENTROID.

60505D (CONTD)

164PROGRAM STEPS
MARK CRACKNELL
WAN - LAGOS

60506D 67-IAU-ADOPTED PRIMARY ASTRONOMICAL CONSTANTS

THIS PROGRAM PROVIDES THE PRIMARY ASTRONOMICAL CONSTANTS ADOPTED IN 1965 BY THE INTERNATIONAL ASTRONOMICAL UNION. DISPLAY IS EXACTLY CONFINED TO THE SIGNIFICANT DIGITS. REFERENCE:EXPLANATORY SUPPLEMENT TO THE ASTRONOMICAL EPHEMERIS AND NAUTICAL ALMANAC, LONDON, HMSO,1961 3RD IMPRESSION, 1974.

069PROGRAM STEPS
J E MEBIUS
NL - BERKEL

60507D 67-INFORMATION THEORETIC ENTROPY

THIS PROGRAM COMPUTES THE INFORMATION THEORETIC ENTROPY OF A SET OF ABSOLUTE OR RELATIVE FREQUENCIES, THAT IS, THE INFORMATION CONTENTS ASSOCIATED WITH THE PROBABILITY DISTRIBUTION CORRESPONDING TO THE GIVEN FREQUENCIES.

041PROGRAM STEPS
J E MEBIUS
NL - BERKEL

60508D 67-KAPLAN-MEIER AND CUMULATIVE HAZARD RATE ESTIMATORS

SURVIVAL ANALYSIS: PROGRAM ESTIMATES THE SURVIVORSHIP FUNCTION BY THE KAPLAN-MEIER ESTIMATOR AND THE CUMULATIVE HAZARD RATE BY THE NELSON ESTIMATOR. BOTH ESTIMATORS ARE NON-PARAMETRIC.

095PROGRAM STEPS
TROND HAIDER
N - OSLO

60509D 67-POLYNOMIAL LAGRANGE'S EXTRAPOLATION

IF YOU KNOW THE VALUES OF A FUNCTION FOR N VALUES OF THE VARIABLE: 0,1,2,... ETC, THIS PROGRAM CALCULATES THE ESTIMATED VALUE OF THE FUNCTION FOR THE FOLLOWING VALUE OF THE VARIABLE.

037PROGRAM STEPS
ETIENNE FAURE
F - GENEST. LERPT

60510D 97-CALCULATION OF PH

THE PROGRAM FINDS THE PH VALUE OF A SOLUTION OF PROTOLYTES WITH KNOWN COMPOSITION. 1)GENERALITY (THE SOLUTES MAY BE ACIDS,BASES OR AMPHOLYTES,STRONG OR WEAK,MONO-,DI- OR TRIPROTIC). 2)MANY DIFFERENT ACIDS AND BASES MAY BE PRESENT SIMULTANEOUSLY. 3)THE ITERATION PROCEDURE WILL ALWAYS CONVERGE. 4)THE ONLY APPROXIMATION IS THE USUAL ONE OF LEAVING OUT ACTIVITY COEFFICIENTS.

222PROGRAM STEPS
KNUD ANDERSEN
DK - VEDBAEK

60511D 97-RESECTION FOUR POINTS COLLINS HELPING POINT

THIS PROGRAM IS DESIGNED TO CALCULATE THE APPROX. (X,Y) FOR POINT P. JUST INPUT THE RESULTS OF THE MEASURMENTS MADE IN THE FIELD,AND THE COORDINATES OF THE FOUR POINTS TOWARDS WHICH YOU HAVE MADE YOUR MEASURMENTS.PROGRAM DOES NOT USE LEAST SQUARE METHOD, IT TAKES THE MEAN OF (XPN,YPN) WHICH WILL BE PRINTED AND FOR A CHECK YOU WILL BE GIVEN THE (DX,DY):S.

60511D (CONTD)

184PROGRAM STEPS
LENNART JOHANSSON
S - VAESTRA FROELUNDA

60512D 67-INTERSECTION OF PRISM AND CONE-PRISM SHELL DEVELOPMENT

PROGRAM CALCULATES THE HEIGHT 'HI' OF TRANSITION PRISM AND DEVELOPED CIRCUMFERENCE LENGTH 'LI' FROM CHOSEN BEGINNING POINT OF GROUND PLANE FIGURE OF PRISM. PREFERENCE GROUND PLANE FIGURE OF PRISM IS CIRCLE OR PARALLELOGRAM WHERE 'XI', 'YI' AND ARC 'LI' ARE SIMPLY DETERMINED. THE PRISMS WITH MENTIONED GROUND PL. FIGURES ARE THEREFORE TREATED IN THIS PROGRAM.
FOR ANY DIFFERENT PRISMS THE USER CAN CONNECT HIS OWN RELEVANT SUBROUTINE TO THE MAIN PROGRAM.

156PROGRAM STEPS
FRANC TOMSIC
YU - LJUBLJANA

60513D 67-DIMENSIONS OF TORISPHERICAL HEADS TO BS 1966

GIVEN ANY THREE OF THE FOUR VARIABLES D,R,H & R THIS PROGRAM WILL COMPUTE THE FOURTH VARIABLE.

126PROGRAM STEPS
LESLIE A TIMPERLEY
UK - FAILSWORTH

60514D 67-PARABOLIC ORBITS

THIS PROGRAM WILL DETERMINE A COMETS'S OR AN OTHER HEAVENLY BODY'S POSITION IN ITS PARABOLIC ORBIT AT A TIME GIVEN IN DAY, MONTH AND YEAR AND ITS FIVE ORBITAL ELEMENTS. ALL USED SUBROUTINES ARE COMMENTED SO THEY CAN BE USED FOR OTHER PURPOSES OR IMPROVED.

224PROGRAM STEPS
ODD-HENRIK TRONDAL
N - STAVANGER

60515D 67-HYPERBOLIC ORBITS

THIS PROGRAM WILL DETERMINE A COMET'S OR AN OTHER CELESTIAL BODY'S POSITION IN ITS HYPERBOLIC ORBIT AT A TIME GIVEN IN DAY, MONTH AND YEAR AND ITS SIX ORBITAL ELEMENTS.
ALL USED SUBROUTINES ARE COMMENTED.

224PROGRAM STEPS
ODD-HENRIK TRONDAL
N - STAVANGER

60516D 67-ELLIPTIC ORBITS

THIS PROGRAM WILL DETERMINE A PLANET'S POSITION FROM ITS SIX ORBITAL ELEMENTS AT A GIVEN DATE IN DAY, MONTH AND YEAR.
ALL USED SUBROUTINES ARE COMMENTED, AND THEY MIGHT BE IMPROVED BY THE USER, OR USED FOR OTHER PURPOSES.

224PROGRAM STEPS
ODD-HENRIK TRONDAL
N - STAVANGER

60517D 67-CONDUIT FLOW

THIS PROGRAM SOLVES FOR PIPE DIAMETER, VOLUME FLOW RATE OR PRESSURE DROP INCOMPRESSIBLE FLOW IN CONDUITS.INTERCHANGEABLE IN - AND OUTPUT OF THESE 3 LEADING DIMENSIONS. DATA CARD OF DIFFERENT FLUIDS.

212PROGRAM STEPS
EDUARD STOESSEL
CH - DUEBENDORF

60518D 67-NUMBER OF SPACERS, SUBSPAN

THE BUNDLE CONDUCTORS ARE USED FOR THE TRANSMISSION OF ELECTRIC

60518D (CONTD)

ENERGY OF HIGH VOLTAGE. THE SPACERS REPRESENT ONE OF THE MOST IMPORTANT ACCESSORIES ON BUNDLE CONDUCTOR TRANSMISSION LINES,AS THEIR PURPOSE IS TO KEEP THE ESTABLISHED SPACING OF THE CONDUCTORS, MORE IMPORTANT IN SPAN IS NUMBER OF SPACERS AND SUBSPAN OR DISTANCE BETWEEN SPACERS

224PROGRAM STEPS
VELIMIR ILIJANIC
YU - ZAGREB

60519D 67-DISTANCE BETWEEN SPACERS - INPUT

TO CALCULATE DISTANCE BETWEEN SPACERS YOU MUST KNOW TENSION IN SPAN FOR MIDDLE YEAR TEMPERATURE, AND FOR THAT YOU MUST USE EQUATION OF STATE WITH BASIC STATE. THIS PROGRAM GIVES YOU BASIC STATE AND WIND LOAD (GW).

132PROGRAM STEPS
VELIMIR ILIJANIC
YU - ZAGREB

60520D 67-CONVEYING EQUATION CORRECTION

WITH KNOWN ELECTRICAL QUANTITY AT THE END (BEGINNING) OF TRANSMISSION LINE, AND KNOWN PARAMETERS OF LINE (LENGTH, IMPEDANCE AND ADMITTANCE), WITH THIS PROGRAM WE CALCULATE QUANTITY AT THE BEGINNING (END) OF TRANSMISSION LINE.

224PROGRAM STEPS
VELIMIR ILIJANIC
YU - ZAGREB

60521D 67-INVERSE OF AN NXN MATRIX

THIS ONE-CARD PROGRAM COMPUTES AND STORES THE INVERSE OF ANY NON-SINGULAR NXN MATRIX (N<=5).MATRIX ELEMENTS ARE INTRODUCED ALL AT ONCE BEFORE THE INVERSION PROCESS BEGINS SO USER CAN BE ABSENT.DURING INVERSION, INVERSE MATRIX REPLACES ORIGINAL ONE IN STORAGE. PRECAUTIONS HAVE BEEN TAKEN TO AVOID ERRORS DUE TO A ZERO PIVOT. NO DATA CARDS REQUIRED. FULLY DOCUMENTED (7 PAGES).

213PROGRAM STEPS
VALENTIN ALBILLO
E - MADRID

60522D 67-3X3 MATRIX OPERATIONS USING RPN

THIS PROGRAM ALLOWS THE USER TO PERFORM 3X3 MATRIX OPERATIONS USING A TRUE-TO-LIFE SIMULATION OF THE RPN STACK, INCLUDING ALL THE FEATURES OF THE STANDARD ONE. APART FROM THE ROUTINES FOR STACK MANIPULATION,PROGRAM INCLUDES THE FOLLOWING OPERATIONS:+(10), -(10), X (DEFINED FOR BOTH MATRIX/MATRIX AND SCALE/MATRIX CASES) (52/7),INVERSE (17), TRANSPOSE (2), AND DETERMINANT (3). NO DATA CARDS REQUIRED. FULLY DOCUMENTED (7 PAGES). NUMBERS IN BRACKETS REPRESENT RUNNING TIMES IN SECONDS.

224PROGRAM STEPS
VALENTIN ALBILLO
E - MADRID

60523D 67-CARGO DISTRIBUTION AT FINAL TRIMMING TO REQUIRED TRIM/DRAFT

GIVEN THE AMOUNT OF CARGO REMAINING TO BE LOADED AND THE APPROPRIATE HYDROSTATIC DATA (IN EITHER IMPERIAL OR METRIC UNITS), THIS PROGRAM COMPUTES THE REQUIRED DISTRIBUTION OF WEIGHTS TO BE ADDED TO SPACED FORWARD AND AFT OF THE CENTRE OF FLOTATION - USUALLY THE END HOLDS - TO GIVE THE REQUIRED TRIM.
THE PROGRAM CAN ALSO BE USED TO FIND THE AMOUNT OF CARGO TO DISCHARGE OR THE FUEL TO BE CONSUMED TO OBTAIN THE REQUIRED TRIM.

60523D (CONTD)

049PROGRAM STEPS
TONY TUCKER
UK - DARTMOUTH

60524D 67-POWER FACTOR CORRECTION 1

THE PROGRAM TOTALS KILO WATTS,KILO VOLT AMPERES,TOTAL KILO VOLT AMPERES REACTIVE,FOR ANY NUMBER OF INDIVIDUAL LOADS ON SINGLE OR THREE PHASE SYSTEMS FROM INPUT OF INDIVIDUAL LOAD KVA AND P.F.INPUT OF CORRECTED POWER FACTOR VALUE OBTAINS THE CAPACITIVE KILO VOLT AMPERES REACTIVE REQUIRED FOR EACH LOAD TOTAL/PHASE. SYSTEMS MAY BE BALANCED OR UNBALANCED, LOADS INPUT IN ANY ORDER AT ANY TIME AND ADDITIONS MADE TO ANY LOAD OR CORRECTED POWER FACTOR CHANGED WITHOUT RE-INPUT OF PREVIOUS DATA.

071PROGRAM STEPS
LAWRENCE B HARTLEY
UK - BRIERFIELD

60525D 67-CHINESE PRIMES

A NUMBER N IS CALLED A CHINESE PRIME, IF ((2**N)-2)/N IS AN INTEGER. YOU WILL WONDER HOW MANY CHINESE PRIMES ARE REAL PRIMES.

078PROGRAM STEPS
STEFAN TROEK
D - PFORZHEIM

60526D 67-NOTE BOOK

"NOTE BOOK" DOES AWAY WITH THE DRUDGERY OF CARRYING WRITING MATERIALS WHEREVER YOU GO. EACH CARD HOLDS UP TO 120 DIGITS OF BLOCK FORMAT NUMERIC OR QUASI-ALPHABETIC INFORMATION. THE USER CAN RAPIDLY WRITE KEY WORDS AND NOTES FOR SUBSEQUENT RETRIEVAL OR ERASURE. OPTIONAL PADLOCK FACILITY PREVENTS UNAUTHORISED USE OF THE NOTE BOOK.

224PROGRAM STEPS
D T RANSOM
UK - CHISLEHURST

60527D 67-TYPEWRITER

YOU HAVE 23 GROUPS OF 5 LETTERS TO RECORD A TEXT. THE FIRST PART OF THE PROGRAM CHANGES AND RECORDS LETTERS IN A CODE (A=01,...,Z=26). THE SECOND PART READS THIS TEXT AND DISPLAYS THIS TEXT LETTER BY LETTER

175PROGRAM STEPS
JEAN REIBEL
F - FONTENAY AUX ROSES

60528D 67-DIFFERENT ROUNDING OF RESULTS (SUBPROGRAMS)

SUBPROGRAMS FOR FOUR DIFFERENT KINDS OF ROUNDING ARE GIVEN: ROUNDING DOWN,ROUNDING UP,ROUNDING TO THE NEAREST NUMBER,150-ROUNDING. DIFFERENT END-DIGITS CAN BE CHOSEN. AN APPLICATION EXAMPLE GIVEN HAS DIFFERENT END-DIGITS WITHIN DIFFERENT RANGES.ROUNDING TO MULTIPLES OF ANY NUMBER IS ALSO POSSIBLE.

138PROGRAM STEPS
ERNST BAENNINGER
CH - BAAR

60529D 97-DUST PRECIPITATORS TEST -GAS FLOW, DEW POINT, EFFICIENCY

DUST PRECIPITATORS TEST (ELECTROFILTERS). CALCULATION OF OUTLET AND INLET DEW POINT,GAS FLOW,DUST LOAD, SUCTION'S PROBE FACTOR AND EFFICIENCY.

278PROGRAM STEPS
ANTONIO JIMENEZ-ARANA
E - MADRID

60530D 67-BEACON TO BEACON NAVIGATION

THIS PROGRAM COMPUTES THE GREAT CIRCLE NAVIGATION. INPUT IS:INITIAL LATITUDE AND LONGITUDE AND LATITUDE AND LONGITUDE OF NEXT BEACONS. OUTPUT IS:INITIAL COURSE, DISTANCE AND CUMULATED DISTANCE FROM ORIGIN, LATITUDE OF VERTEX, LATITUDE CROSSING OF ANY LONGITUDE AND BOTH LONGITUDE CROSSINGS OF ANY LATITUDE. THE SAME FOR DIRECT TRACK FROM ORIGIN TO ANY OF THE BEACONS.

224PROGRAM STEPS
PIERRE A DELRUELLE
B - BRUSSLES

60531D 67-REGISTERS-CHECKING

THIS PROGRAM DISPLAYS THE 26 REGISTERS OF THE HP-67 OR HP-97.

035PROGRAM STEPS
CHRISTIAN H MARYSSAEL
B - BRUSSELS

60532D 67-DUAL DATA STORAGE LOADER

UP TO 30 PAIRS OF POSITIVE INTEGERS X AND Y CAN BE STORED ON A MAGNETIC CARD IN PRIMARY/X/ AND SECONDARY/Y/ REGISTERS FROM R0 THROUGH TO R19. EACH 3 NUMBERS <1000 ARE CARRIED IN ONE REGISTER (AAA.BBBCCC). PRE-LOADED DUAL DATA FROM SEVERAL CARDS CAN BE COMBINED. THIS LOADER IS DESIGNED FOR USE WITH PROGRAMS COMPUTING BASIC STATISTICS FOR TWO VARIABLES,CORRELATION/SEE PROGRAM CROSS AND AUTO-CORRELATION ETC. AUTOMATICALLY, WITHOUT REPEATED KEYING IN DATA.

201PROGRAM STEPS
TOMAS JARCHOVSKY
CS - PRAHA

60533D 67-CORRELATION COEFFICIENTS FOR LOADED DUAL DATA

PROGRAM COMPUTES THE LINER CORRELATION COEFFICIENT FOR SETS OF PRE-LOADED DATA AUTOMATICALLY. OPTIONAL OUTPUT ARE TWO REGRESSION CONSTANTS DEFINING A STRAGHT LINE Y=A+BX.DATA HAVE TO BE STORED IN A STANDARD WAY /SEE PROGRAM DUAL DATA STORAGE LOADER 2X30/ WHICH MAKES POSSIBLE A MERGING OF OTHER CARDS BOTH"SERIAL" /ADDITIONAL DUAL DATA/, AND "PARALLEL"/FURTHER VARIABLES/. IN THIS LATTER CASE A MATRIX OF THE CORRELATION COEFFICIENT CAN BE BUILT FOR MULTIVARIATE DATA.

213PROGRAM STEPS
TOMAS JARCHOVSKY
CS - PRAHA

60534D 67-AREAS,LENGTH OF ARCS, VOLUMES OF REVOLUTION. RECT. OR POLAR

IT COMPUTES (FOR CURVES EXPRESSED EITHER IN RECTAN. OR POLAR COORDIN) ANY OF THE FOLLOWING:1)AREA BOUNDED BY THE CURVE,THE X AXIS,& X1,X2 (OR 2 ANGLES. 2)LENGTH OF THE ARC BETWEEN X1,X2 (OR 2 ANGLES). 3)VOLUME & SURFACE OF THE SOLID OBTAINED BY REVOLUTION OF CURVE AROUND THE X AXIS BETWEEN X1,X2. ROUTINES FOR INTEGRATION (USING A 5TH ORDER METHOD),DERIVATION & AUTOMATIC EVALUATION OF USER'S DEFINED FUNCT. ARE ALSO AVAILABLE. NO DATA CARDS REQ. 63 STEPS & 10 REG. LEFT TO DEFINE THE CURVE. FULLY DOCUMENTED-7 PAGES

161PROGRAM STEPS
VALENTIN ALBILLO
E - MADRID

60535D 67-NUMERICAL ANALYSIS OF FUNCTIONS

GIVEN SOME USER'S-DEFINED FUNCTION F(X), THIS PROGRAM MAY BE USED TO EVALUATE F(X) & ITS 1ST OR 2ND DE-

60535D (CONTD)

RIVATIVES,EITHER MANUAL. OR AUTOMATICALLY.IT MAY ALSO FIND REAL ROOTS OF F(X) OR F'(X), AND CAN COMPUTE THE INTEGRAL OF F(X) BETWEEN FINITE OR INFINITE LIMITS,EITHER WITH 1 OR N SUBINTERVALS, USING A METHOD THAT YIELDS EXACT RESULTS IF F(X) IS A POLYNOMIAL OF DEGREE 5 OR LESS. 54 STEPS & 13 REGISTERS LEFT TO DEFINE F(X). NO DATA CARDS REQUIRED. ALL ROUTINES ARE ACCURATE & FAST. FULLY DOCUMENTED (7 PAGES).

170PROGRAM STEPS
VALENTIN ALBILLO
E - MADRID

60536D 67-MATH IN MIND

YOU GET TWO DIFFERENT NUMBERS. YOU ARE GOING TO "WALK" FROM THE FIRST NUMBER TO THE OTHER. THE ONLY WAYS YOU CAN GO ARE SUB WITH 2 ADD 2 MULT WITH 2 AND DIV WITH 2.

069PROGRAM STEPS
STEFAN LIND
S - BALSTA

60537D 67-FAST FRACTION SIMPLIFICATION

THIS IS A VERY FAST OPERATING PROGRAM. IT SIMPLIFIES ALMOST EVERY FRACTION. THE EXCEPTION IS WHEN THERE IS ANY PRIMENUMBER IN THE FRACTION.

152PROGRAM STEPS
STEFAN LIND
S - BALSTA

60538D 67-SOME STATISTICAL WORK WITH NIKOMACHOS ROUTINE

PROGRAM USES "NIKOMACHOS OF GERASA'S" ALGORITHM TO CALCULATE THE GREATEST COMMON DIVISOR (GCD), AND WITH THE HELP OF A RANDOM NUMBER GENERATOR (OF YOUR CHOICE) YOU CAN DO A STATISTICAL EXAMINATION OF NIKOMACHOS ALGORITHM.

106PROGRAM STEPS
STEFAN LIND
S - BALSTA

60539D 97-TRANSFORMATION FROM BODY-AXES TO EARTH-AXES VICE VERSA

GIVEN THE EULER-ANGLES PSI (YAW-ANGLE), THETA (PITCH-ANGLE) AND PHI (ROLL-ANGLE) THE PROGRAM FIRST COMPUTES THE ELEMENTS OF THE TRANSFORMATION MATRIX (DIRECTIONAL COSINES). FOR A GIVEN VECTOR IN BODY (VEHICLE-) AXES THE COMPONENTS OF THIS VECTOR IN EARTH-AXES VICE VERSA ARE EVALUATED.

345PROGRAM STEPS
F DOERRSCHEIDT
D - PADERBORN

60540D 67-CURVED BEAM-RECTANGULAR CROSS SECTION

THIS PROGRAM COMPUTES THE STRESS AT THE EXTREME FIBRES ON THE CONCAVE & CONVEX SURFACES OF A CURVED BEAM OF RECTANGULAR SECTION BENDING IN ITS PLANE OF CURVATURE.

083PROGRAM STEPS
LESLIE A TIMPERLEY
UK - FAILSWORTH

60541D 67-CURVED BEAM - CIRCULAR & ELLIPTICAL SOLID SECTION

THIS PROGRAM COMPUTES THE STRESSES AT THE EXTREME FIBRES ON THE CONCAVE & CONVEX SURFACES OF A CURVED BEAM OF CIRCULAR OR ELLIPTICAL SOLID SECTION BENDING IN ITS PLANE OF CURVATURE.

60541D (CONTD)

081PROGRAM STEPS
LESLIE A TIMPERLEY
UK - FAILSWORTH

60542D 67-CURVED BEAM SYMETRICAL I OR RECTANGULAR HOLLOW SECTION

THIS PROGRAM COMPUTES THE STRESSES AT THE EXTREME FIBRES ON THE CONCAVE & CONVEX SURFACES OF A CURVED BEAM OF A SYMETRICAL I SECTION OR RECTANGULAR HOLLOW SECTION BENDING IN ITS PLANE OF CURVATURE.

170PROGRAM STEPS
LESLIE A TIMPERLEY
UK - FAILSWORTH

60543D 97-DESIGN OF AMICI FRONT LENS FOR DRY MICROSCOPE OBJECTIVES

THE PROGRAM IS USED TO DESIGN THE PLANO-CONVEX FRONT LENS OF A DRY MICROSCOPE OBJECTIVE.GIVEN THE WORKING DISTANCE AND N.A. THE THICKNESS OF THE COMPONENT AND THE REFRACTIVE INDEX OF THE GLASS USED THE RADIUS OF CURVATURE OF THE CONVEX SURFACE IS DETERMINED USING CONRADY'S CRETERIA.DATA USED IN THE DESIGN OF THE REAR COMPONENTS OF THE OBJECTIVE ARE ALSO CALCULATED AND PRINTED OUT.

194PROGRAM STEPS
JAMES HOUGHTON
UK - TETBURY

60544D 67-HEAT CAPACITY OF SOLIDS

GIVEN 2 OUT OF 3 PARAMETERS (DEBYE TEMPERATURE, SOLID TEMPERATURE AND RELATED HEAT CAPACITY), PROGRAM, BASED ON DEBYE EQUATION, COMPUTES THE LAST PARAMETER.

147PROGRAM STEPS
GIUSEPPE LIGATO
I - CUSANO MILANINO

60545D 67-WIND ACTION ON TALL STRUCTURES

GIVEN THE WIND VELOCITY, PROGRAM APPLIES THE U.S WEATHER BUREAU CORRELATION TO DETERMINE THE UNIT WIND PRESSURE AND, AT ANY DESIRED SECTION, THE BENDING MOMENT, THE TOTAL STRESS AND THE TOTAL DEFLECTION FOR TALL STRUCTURES.

080PROGRAM STEPS
GIUSEPPE LIGATO
I - CUSANO MILANINO

60546D 67-MAXWELL VELOCITY DISTRIBUTION

BASED ON MAXWELL'S LAW, PROGRAM YIELDS THE MOST PROBABLE, AVERAGE AND ROOT-MEAN-SQUARE VELOCITIES FOR IDEAL GASES;ALSO THE PERCENTAGE OF PARTICLES WITH OR OVER OR BELOW A GIVEN VELOCITY OR BETWEEN TWO ASSIGNED VELOCITIES.
METRIC & ENGLISH UNITS MAY BE USED.

187PROGRAM STEPS
GIUSEPPE LIGATO
I - CUSANO MILANINO

60547D 67-THERMAL IONIZATION

THE EGGERT-SAHA EQUATION, OF PARAMOUNT IMPORTANCE FOR THE STUDY OF FLAMES AND THE ATMOSPHERE OF VERY HOT STARS, IS APPLIED IN THIS PROGRAM TO PREDICT THERMAL IONIZATION.

144PROGRAM STEPS
GIUSEPPE LIGATO
I - CUSANO MILANINO

60548D 67-GRAND PRIX FORMULA ONE

TAKE PLACE IN A RESPONSIVE FORMULA 1 CAR: YOU WILL SEE THE RACETRACK

60548D (CONTD)

UNFOLDING BEFORE YOU. CHANGE GEAR, DIRECTION, ACCELERATE (2 RATES), OR MAINTAIN SPEED, OR BRAKE (2 RATES), AND, IF YOU REMAIN ON THE RIGHT TRACK, YOU WILL RUN THE DISTANCE YOU FIXED. - IN MINIMUM TIME? THOUGH SECOND OF RACE LASTS ABOUT 10.5 SECONDS, BE ALERT! CHAMPIONS MAY EVEN QUICKEN THE GAME UP TO 8/1. - GAME VALID FOR HP-97.

203PROGRAM STEPS
JEAN THIBERGE
F - CHERBOURG

60549D 67-MOON LINE OF POSITION

GIVEN D.R. POSITION, HEIGHT OF EYE, DATE, GMT AND SEXTANT ALTITUDE OF LOWER OR UPPER LIMB OF MOON, THIS PROGRAM COMPUTES INTERCEPT AND AZIMUTH. BUILT-IN BROWN'S SERIES ARE USED TO COMPUTE MOON COORDINATES. 3 PROGRAM AND 1 DATA CARDS ARE CALLED AUTOMATICALLY. PRECISION IS ABOUT 0.5 NAUTICAL MILE FOR THE NEXT HUNDRED YEARS.

671PROGRAM STEPS
JEAN THIBERGE
F - CHERBOURG

60550D 67-AVIATION ENGLISH-SI CONVERSIONS

THIS PROGRAM PROVIDES THE MORE COMMON CONVERSIONS BETWEEN ENGLISH-SI UNITS USED IN AVIATION. SIDE ONE OF THE CARD PROVIDES LENGTH, DISTANCE, SPEED, AND TEMPERATURE CONVERSIONS. SIDE TWO PROVIDES MASS, FORCE,VOLUME,PRESSURE AND SPECIFIC FUEL CONSUMPTION CONVERSIONS. ONLY ONE SIDE OF THE CARD MAY BE LOADED INTO PROGRAM MEMORY AT ANY TIME.

197PROGRAM STEPS
GOJKO MAGAZINOVIC
YU - SPLIT

60551D 67-FRACTION ARITHMETIC WITH 4 STACK RPN LOGIC

THIS PROGRAM PERMITS FOUR-FUNCTION FRACTION ARITHMETIC WITH 4 STACK RPN LOGIC.IT IS OBTAINED BY PRESENTATION OF FRACTION IN FORM "NUMERATOR . DENOMINATOR" IN ALL STACK REGISTERS. RESULT IS IN THE SAME FORM. BECAUSE OF THAT YOU CAN PERFORM FRACTION CALCULATIONS IN THE SAME MANNER AS WITH ALL REAL NUMBERS ON YOUR HP-CALCULATOR.

210PROGRAM STEPS
GOJKO MAGAZINOVIC
YU - SPLIT

60552D 67-POWER FACTOR CORRECTION 2

THE PROGRAM OBTAINS REQUIRED CAPACITANCE, THE CAPACITOR CURRENT, REQUIRED KVAR', TOTAL KVA, AND TOTAL KW, FOR ANY NUMBER OF INDIVIDUAL LOADS ON SINGLE OR 3 PHASE SYSTEMS, BALANCED OR UNBALANCED. LOAD INPUT, IN ANY ORDER, IS PHASE VOLTAGE AND REQUIRED POWER FACTOR, LOAD KVA/CURRENT AND LOAD POWER FACTOR. ADDITIONS MAY BE MADE TO ANY LOAD OR CORRECTED POWER FACTOR CHANGED AT ANY TIME WITHOUT RE-INPUT OF PREVIOUS DATA. OUTPUTS RECORDED FOR DATA CARD STORAGE. TOTAL LOAD KVAR IS ALSO OUTPUT AND RECORDED.

158PROGRAM STEPS
LAWRENCE B HARTLEY
UK - BRIERFIELD

60553D 67-DISTANCE COEFFICIENTS WITH OR WITHOUT SCALING

VARIOUS DISTANCE COEFFICIENTS ARE CALCULATED WITH THE POSSIBILITY OF A SCALING FACTOR, (EX. DIVIDING BY THE RANGE OF EACH VARIABLE). DISTANCE EQUALS THE SUM OF THE ABSOLUTE DIFFERENCES; OR SUM OF THE

60553D (CONTD)

SQUARED, OR SQUARE ROOTED DIFFERENCES, OR THE SUM OF THE DIFFERENCES SQUARED OR SQUARE ROOTED. THE PROGRAM ACCEPTS UP TO 4 CASES WITH AN UNLIMITED NUMBER OF VARIABLES. OUTPUT IS ALL SIX PERMUTATIONS OF THE FOUR CASES.

112PROGRAM STEPS
IAN S ZEILER
F - PESSAC

60554D 67-REAL ESTATE ANALYSIS

PROGRAM GIVES A COMPLETE REAL ESTATE INVESTMENT ANALYSIS IN FOUR CHAPTERS:1.ANALYSIS OF THE PURCHASE (SUMMARY OF THE OFFERING);
2. PROJECTION OF N YEARS GIVEN CASH FLOWS AND TAXABLE INCOMES;
3. REFINANCING AFTER N YEARS;
4. ANALYSIS OF A RESALE AFTER N YEARS.

866PROGRAM STEPS
CHRISTIAN H MARYSSAEL
B - BRUSSELS

60555D 97-CRIBBAGE SCOREKEEPER

ALLOWS SCORES TO BE KEPT OF ONE, TWO,THREE,OR FOUR PLAYER CRIBBAGE WITH EITHER 61 POINT OR 121 POINT TOTAL.

124PROGRAM STEPS
BRIAN LASEBY
UK - BANGOR GWYNEDD

60556D 67-HEATING PIPES DIMENSIONNING BY COLEBROOK'S APPROXIMATION

PROGRAM EVALUATES SPECIFIED DIAMETER, SPEED, HEAD LOSS OF HEATING PIPES WITH FITTINGS,GIVEN HEAT FLOW IN WATT OR KCAL/H AND UPPER LIMITS ON SPEED AND LINEAR HEAD LOSS,USING A GOOD APPROXIMATION OF COLEBROOK'S FORMULA AND ROUNDING ON EXACT SPECIFIED DIAMETERS.
PROGRAM IS QUICKER AS WITH EXACT COLEBROOK-FORMULA.

211PROGRAM STEPS
W. DEGEEST, F. GRULOIS & F. ROGGE
B - WEZEMBEEK-OPPEM

60557D 97-VERY HIGH/VERY LOW 9,999,999,999

THIS PROGRAM COMPLEMENTS BARRY FREEMAN'S (52325D).YOU THINK OF ANY NUMBER FROM 1 TO 9,999,999,999, MACHINE GUESSES IT. YOU SAY WHETHER IT IS HIGH, VERY HIGH, LOW OR VERY LOW. PROGRAM FINDS MAGNITUDE OF THE NUMBER (WITHIN A FACTOR OF 2) IN THE FIRST FEW MOVES, SO IT HANDLES SMALL NUMBERS QUICKLY.

072PROGRAM STEPS
DAVID ARTHUR HATCHER
UK - LONDON

60558D 67-PHARMACEUTICALS STABILITY ISOTHERM. DEGRADATION KINETICS

FROM A SET OF EXPERIMENTAL DATA POINTS TIME-CONCENTRATION AND A DETERMINATE REACTION ORDER CHOSEN BY THE USER,THIS PROGRAM CALCULATES THE RATE CONSTANT OF DEGRADATION, THE LIFE-TIME DESIRED, THE VARIANCE OF BOTH VALUES PLUS THE VARIANCE OF THE EXPERIMENTAL ERROR, USING THE REGRESSION METHODS. THE PROGRAM ALSO GIVES THE DETERMINATION COEFFICIENT WITH THE OBJECT OF FINDING THE REACTION ORDER WHC BETTER FITS THE EXPERIMENTAL DATA.

215PROGRAM STEPS
RAMON FRANQUESA GRANER
E - BARCELON

60559D 67-DIMENSIONS AND HEAD LOSS OF STRAIGHT DUCTS

60559D (CONTD)

GIVEN A STRAIGHT DUCT,WITHOUT SINGULARITIES AS BENDS,SPLITS,ETC, GIVEN ITS MATERIAL,KIND OF CROSS SECTION, FLOW RATE, LENGTH, MAXIMUM SPEED, EVENTUALLY MAXIMUM HEIGHT OF CROSS SECTION, PROGRAM CALCULATES MINIMUM WIDTH OF CROSS SECTION OR MINIMUM DIAMETER.INPUTING SPECIFIED WIDTH OR DIAMETER, IT GIVES EXACT FLOW RATE, SPEED, DYNAMIC PRESSURE, LINEAR HEAD LOSS AND TOTAL HEAD LOSS.

182PROGRAM STEPS
WILLY DEGEEST & JACQUES GRULOIS
B - WEZEMBEEK-OPPEM

60560D 67-ROUNDS/TIME CONVERTER FOR WINDED TAPE

THIS PROGRAM PERMITS YOU TO KNOW HOW LONG OF AN AUDIO TAPE HAS BEEN USED, GIVEN THE NUMBER OF TURNS ON THE TAPE-RECORDER COUNTER. THE RELATION BETWEEN BOTH IS OF COURSE NON LINEAR DUE TO THE DECREASING DIAMETER OF EACH SPOOL.THE PROGRAM IS ABLE TO KEEP AND COMPUTE DATA FOR 5 DIFFERENT TAPES AT THE SAME TIME.

121PROGRAM STEPS
PHILIPPE ALLIAUME
F - DESCARTES

60561D 97-GUIDANCE BY PROPORTIONAL NAVIGATION

THE DYNAMIC BEHAVIOR OF A PURSUER P PURSUING A MANOEUVRING OR NON-MANOEUVRING EVADER E IS SIMULATED. THE PURSUER HAS A LINEAR SECOND ORDER TIME LAG RESPONSE AND IS GUIDED BY PROPORTIONAL NAVIGATION WITH (OPTIONAL) DEAD SPACE AND SATURATION. THE OUTPUT CONSISTS OF THE CHARACTERISTIC VALUES OF THE INITIAL CONSTANT BEARING COURSE, TIME OF FLIGHT,BEARING AND DISTANCE BETWEEN P AND E AND (OPTIONAL) HEADING, TURNING RATE AND TURNING ACCELERATION OF P.

413PROGRAM STEPS
FRANK DOERRSCHEIDT
D - PADERBORN

60562D 67-CIRCULAR SEWERS

PROGRAM OBTAINS VELOCITY, DIAMETER, AND DEPTH OF WATER INTO A TUBING SEWERS. KNOWN HAVING MUCH WATER AND LENGTH GRADIENT.

224PROGRAM STEPS
LORENZO PORTILLO
E - BENICASIM

60563D 97-TITRATION CURVES AND BUFFER CAPACITY

THE PROGRAM CALCULATES ANY NUMBER OF COORDINATES OF 1)TITRATION CURVES, 2)INVERSE TITRATION CURVES AND 3)BUFFER CAPACITY CURVES. THE TITRATOR CONTAINS STRONG ACID OR STRONG BASE. THE TITRAND SOLUTION MAY CONTAIN SEVERAL DIFFERENT ACIDS AND CORRESPONDING BASES. EACH OF THESE ACIDS MAY BE STRONG OR WEAK, MONO-,DI-, OR TRIPROTIC.
ATTENTION:THIS PROGRAM CAN ONLY BE USED IN CONNECTION WITH PROGRAM 60510.

224PROGRAM STEPS
KNUD ANDERSEN
DK - VEDBUEK

60564D 67-DISTANCES AND HEADINGS ON EARTH BETWEEN 2 POINTS

KNOWING TWO POINTS ON EARTH BY THEIR LONGITUDE AND LATITUDE, THIS PROGRAM COMPUTES THE HEADING AND THE DISTANCE BETWEEN THEM IN NAUTICAL MILES, STATUTE MILES, OR KILOMETERS, ALSO THE STRAIGHT LINE

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DISTANCE IN KMS.

203PROGRAM STEPS
JOHN P LEBURTON
B - LONCIN

60565D 67-GAUSSIAN PROBABILITY

PROGRAM EXAMINES IF A RANDOM VARIABLE R IS NORMALLY DISTRIBUTED (WITH MEAN M AND STANDARD DEVIATION S) SO:PR(R<=X)

111PROGRAM STEPS
JOHN VAN THIELEN
B - STABROEK

60566D 67-RHUMBLINES AND POSITIONS

GIVEN ONE OR MORE PAIRS OF COURSES AND DISTANCES, THE GENERAL COURSE AND DISTANCE IS COMPUTED. IF THE START POSITION (D.R)IS KNOWN, THE NEW POSITION IS COMPUTED.
THE PROGRAM ALSO COMPUTES A RHUMBLINE COURSE AND DISTANCE WHEN TWO POSITIONS ARE KNOWN.
DATE LINE OR POLES CAN BE CROSSED.

220PROGRAM STEPS
WILLEM BRUNINGS
NL - BILTHOVEN

60567D 97-KINETIC ENERGY

THIS PROGRAM CALCULATES AN INTERCHANGEABLE SOLUTION AMONG THE VARIABLES WEIGHT (MASS), VELOCITY, AND KINETIC ENERGY, FOR AN OBJECT MOVING AT CONSTANT VELOCITY. THE PROGRAM OPERATES IN EITHER ENGLISH OR METRIC UNITS.

065PROGRAM STEPS
MICHAEL TARNOWSKI
D - WIESBADEN

60568D 97-MOHR CIRCLE FOR STRESS

GIVEN THE STATE OF STRESS ON AN ELEMENT, THE PRINCIPAL STRESSES AND THEIR ORIENTATION CAN BE FOUND. THE MAXIMUM SHEAR STRESS AND IT'S ORIENTATION IS ALSO COMPUTED.

039PROGRAM STEPS
MICHAEL TARNOWSKI
D - WIESBADEN

60569D 97-RESITIVE/REACTIVE CIRCUIT CALCULATIONS

THIS PROGRAM PERFORMS RESONANCE CALCULATIONS FOR R-L-C CIRCUITS, CALCULATES THE REACTANCE OF INDUCTIVE AND CAPACITIVE BRANCHES, THE EQUIVALENT VALUE OF SERIES CAPACITORS OR PARALLEL RESISTORS AND INDUCTORS, AND PERFORMS POWER CALCULATIONS FOR RESISTIVE BRANCHES.

050PROGRAM STEPS
MICHAEL TARNOWSKI
D - WIESBADEN

60570D 67-OSCULATING INTERPOLATION OF THIRD DEGREE

ASSUMING THAT VALUES OF BOTH F(X) & ITS 1ST DERIVATIVE F'(X) ARE KNOWN FOR 2 ARBITRARY POINTS S1,X2, THIS PROGRAM DETERMINES A 3RD DEGREE POLYNOMIAL P(X) IN SUCH A WAY THAT P(X) AND F(X) POSSESS THE SAME VALUE & THE SAME DERIVATIVE AT EACH OF THOSE 2 POINTS. ROUTINES FOR EVALUATION OF P(X) & P'(X) ARE AVAILABLE, THUS ALLOWING HERMITIAN INTERPOLATION OR EXTRAPOLATION. BOTH, DATA & RESULTS, ARE SAVED BY PROGRAM. RUNNING TIME IS 4 SEC. APPLICATION EXAMPLES GIVEN. FULLY DOCUMENTED (7 PAGES)

111PROGRAM STEPS
VALENTIN ALBILLO
E - MADRID

60571D 67-CYCLONE EFFICIENCY

THIS PROGRAM DESCRIBES A PROCEDURE FOR DETERMINING CYCLONE FRACTIONAL (GRADE) EFFICIENCY AND IS BASED MAINLY ON CYCLONE DIMENSIONS AND FLOW CHARACTERISTICS OF PARTICLE LADEN GASES.

223PROGRAM STEPS
LESLIE A TIMPERLEY
UK - FAILSWORTH

60572D 67-TREATMENT TIME FOR IRRADIATION BY A COBALT 60 THERAPY BEAM

THIS PROGRAM CALCULATES TREATMENT TIME TO DELIVER A GIVEN DOSE TO A POINT SET IN A PATIENT ON THE BEAM AXIS OF A COBALT 60 GAMMA RAYS THERAPY UNIT. IT ALSO CALCULATES THE PERCENTAGE DEPTH DOSE AND THE TISSUE-AIR RATIO AT THIS POINT AND THE MAXIMUM DOSE ON THE BEAM AXIS. AN APPROXIMATION ALLOWS TO CALCULATE DOSE IN ANOTHER POINT NOT SET ON THE BEAM AXIS, BUT NOT TO CLOSE OF THE FIELD BORDERS.

224PROGRAM STEPS
JEAN DROUARD
F - SAINT-QUENTIN

60573D 67-DEPTH OF FIELD-2: CLOSE-UP AND MACROPHOTOGRAPHY

CLOSE-UP AND MACROPHOTOGRAPHY INVOLVES VERY LIMITED DEPTH OF FIELD (SHARPNESS ZONES). THIS PROGRAM INDICATES THESE ZONES (AND HENCE THE PERMISSIBLE DEPTH OF A CLOSE-UP OR MACRO SUBJECT) AT DIFFERENT LENS APERTURES AND MAGNIFICATIONS, AND THE REQUIRED APERTURE TO ACHIEVE A GIVEN DEPTH OF FIELD. IT ALSO SIGNALS WHETER THE APERTURE USED RISKS RESOLUTION LOSS THROUGH DIFFRACTION AND GENERATES COMPLETE CLOSE-UP DEPTH OF FIELD TABLES AT PREDETERMINED MAGNIFICATION STEPS OR STANDARD F-STOP INTERVALS.

158PROGRAM STEPS
L ANDREW MANNHEIM
UK - RICHMOND

60574D 67-CASH AND LEDGER ACCOUNTING

THE PROGRAM KEEPS TRACK OF UP TO 19 LEDGER CATEGORIES OF BUSINESS RECEIPTS AND PAYMENTS PLUS VAT REGISTERS.(MULTICARD OPERATION CAN HOWEVER HANDLE ALSO UNLIMITED NUMBERS OF LEDGER HEADINGS OR CATEGORIES). IT FURTHER TOTALS RECEIPTS AND PAYMENTS WITH AND WITHOUT VAT AND TOTAL FINAL BALANCE. ACCOUNTING MAY BE INTERRUPTED AND DATA STORED ON DATA CARDS FOR FUTURE RESUMPTION

321PROGRAM STEPS
L ANDREW MANNHEIM
UK - RICHMOND

60575D 67-STEAM EJECTORS

STEAM-JET EJECTORS ARE WIDELY USED FOR EXHAUSTING PROCESS VESSELS AND MAINTAINING VACUUM. GIVEN THE QUANTITY OF AIR (OR GAS) TO BE EXHAUSTED, THE REQUIRED VACUUM AND THE AVAILABLE PRESSURE OF MOTIVE STEAM, PROGRAM CALCULATES THE REQUIRED QUANTITY OF MOTIVE STEAM AND ESTIMATES MAIN DIMENSIONS OF EJECTOR. METRIC OR ENGLISH UNITS ACCEPTED.

224PROGRAM STEPS
GIUSEPPE LIGATO
I - CUSANO MILANINO

60576D 67-ACTUAL STAGES OF ABSORBERS AND STRIPPERS

THIS PROGRAM CALCULATES THE NUMBER OF ACTUAL AND IDEAL STAGES AND THE OVERALL EFFICIENCY FOR A PLATE ABSORBER OR STRIPPER, EMPLOYING THE

60576D (CONTD)

MURPHREE STAGE EFFICIENCY. COMPOSITION AT EACH PLATE, IDEAL & ACTUAL, CAN ALSO BE DETERMINED.

166PROGRAM STEPS
GIUSEPPE LIGATO
I - CUSANO MILANINO

60577D 67-ELEMENTARY SPECTRA OF HYDROGEN-LIKE ATOMS

FOR ALL TERMS OF THE HYDROGEN ATOM (LYMAN, BALMER, PASCHEN, BRACKETT, PFUND SERIES) AND OF ONE-ELECTRON (HYDROGEN-LIKE) ATOMS, THE PROGRAM DETERMINES THE IONIZATION POTENTIAL THE ELECTRON RADIUS, THE WAVELENGTH AND THE ENERGY IN THE TRANSITIONS BETWEEN STABLE BOHR ORBITS. HIGHER ORDER EFFECTS AS FINE OR HYPERFINE STRUCTURE ARE NOT CONSIDERED.

133PROGRAM STEPS
GIUSEPPE LIGATO
I - CUSANO MILANINO

60578D 67-AIR EJECTORS

AIR-JET EJECTORS ARE WIDELY USED FOR EXHAUSTING PROCESS VESSELS AND MAINTAINING VACUUM. GIVEN THE QUANTITY OF AIR (OR GAS) TO BE EXHAUSTED, THE REQUIRED VACUUM AND THE AVAILABLE PRESSURE OF THE EXHAUSTING (MOTIVE) AIR, PROGRAM CALCULATES THE REQUIRED QUANTITY OF MOTIVE AIR AND ESTIMATES MAIN DIMENSIONS OF EJECTOR.
METRIC OR ENGLISH UNITS ACCEPTED.

204PROGRAM STEPS
GIUSEPPE LIGATO
I - CUSANO MILANINO

60579D 67-EPHEMERIS OF THE PLANETS

THE ALMANAC FOR COMPUTERS HAS BEEN DESIGNED TO FACILITATE THE APPLICATION OF SMALL CALCULATORS TO PROBLEMS OF ASTRONOMY APPLIED TO LAND-SURVEYING AND NAVIGATION.
THIS PROGRAM USES SETS OF POLYNOMIAL COEFFICIENTS (TABULATED IN THE "ALMANAC FOR COMPUTERS" FOR THE YEAR 19**) IN CHEBYSHEV EXPANSIONS. THE SERIES EXPANSION CAN BE EVALUATED FOR 95 DAYS VALIDITY (HIGH PRECISION SERIES) OR 365 DAYS VALIDITY (LOW PRECISION SERIES).

201PROGRAM STEPS
M HOOIJBERG
NL - GENDEREN

60580D 67-TRANSVERSE MERCATOR PROJECTION - AIRY (GB)

THE PROGRAM CONVERTS GEOGRAPHICAL COORDINATES (LATITUDE & LONGITUDE) TO AND FROM TRANSVERSE MERCATOR COORDINATES (EASTINGS & NORTHINGS), CALCULATES THE CONVERGENCE AND THE SCALE FACTOR FOR THE AIRY SPHEROID (GREAT BRITAIN)

423PROGRAM STEPS
M HOOIJBERG
NL - GENDEREN

60581D 67-LEAST SQUARES ADJUSTMENT OF TRILATERATIONS

TO DETERMINE THE COORDINATES OF STATION S, DISTANCES HAVE BEEN MEASURED TOWARDS SURROUNDING STATIONS, THE COORDINATES OF WHICH ARE KNOWN & ENTERED IN DATA REGISTERS. THE PROGRAM REQUIRES THE INPUT OF AN APPROX. POSITION OF S (ONCE), AND TWO - FIVE RANGES MEASURED. THE POSITION IS CALCULATED BY MEANS OF THE LEAST SQUARES METHOD, AND THE STANDARD DEVIATIONS OF THE ADJUSTED VALUES ARE CALCULATED. RAPID COMPUTATION OF A SHIP'S COURSE IS POSSIBLE.

191PROGRAM STEPS

60581D (CONTD)

M HOOIJBERG
NL - GENDEREN

60582D 67-SUMMATION OF AN INFINITE ALTERNATING SERIES

GIVEN AN INFINITE ALTERNATING SERIES (I.E., THE SIGNS OF SUCCESSIVE TERMS STEADILY ALTERNATE),WHOSE GENERAL TERM IS DEFINED BY USER (41 STEPS AT MOST),THE PROGRAM COMPUTES ITS SUM VERY FAST,CHOSING BETWEEN 2 METHODS:1)A REGULAR EULER'S TRANSFORMATION USING N FORWARD DIFFERENCES (N<=17). 2)AN ITERATIVE HUTTON'S TRANSFORM. WHICH CARRIES OUT 8 ITERAT. ON A PREVIOUSLY GENERATED HUTTON SEQUENCE OF PARTIAL SUMS. SOME DIVERGENT SERIES MAY BE TREATED,TOO. ACCURACY MAY REACH 10 PLACES. 7 PAGES OF DOCUMENTATION.

183PROGRAM STEPS
VALENTIN ALBILLO
E - MADRID

60583D 67-DOCK-WATER ALLOWANCE METRIC

PROGRAM WILL COMPUTE AND DISPLAY THE DOCK WATER ALLOWANCE - FRESH WATER ALLOWANCE OF ANY SHIP CALIBRATED IN METRIC UNITS; VARIABLES BEING THE DISPLACEMENT, TPC AND DENSITY OF THE WATER IN WHICH THE SHIP IS FLOATING OR WILL BE ENTERING.

047PROGRAM STEPS
TONY TUCKER
UK - DARTMOUTH

60584D 67-RUTHERFORD SCATTERING FORMULA

THIS PROGRAM APPLIES THE RUTHERFORD FORMULA ON THE SCATTERING OF ALPHA-PARTICLES. IT PREDICTS ANY ONE OUT OF THE FOLLOWING PARAMETERS: TARGET ATOMIC NUMBER, MASS AND THICKNESS, RADIATING INTENSITY AND ENERGY OF INCIDENT PARTICLES, NUMBER OF SCATTERED PARTICLES AND RELATED ANGLE OF DEFLECTION. ALSO THE DISTANCE OF CLOSEST APPROACH CAN BE DETERMINED.

147PROGRAM STEPS
GIUSEPPE LIGATO
I - CUSANO MILANINO

60585D 67-MULTICOMPONENT DISTILLATION RECOVERY

THE RECOVERY OF EACH COMPONENT IN THE DISTILLATE (TOP) AND BOTTOMS FROM MULTICOMPONENT DISTILLATION IS ESTIMATED FROM VALUES OF HEAVY KEY COMPONENT RECOVERY IN THE BOTTOMS, LIGHT KEY COMPONENT RECOVERY IN THE DISTILLATE AND RELATIVE VOLATILITY OF LIGHT KEY COMPONENT.
RESULTS COMPARE FAVOURABLY WITH THE PLATE-TO-PLATE CALCULATION METHOD.

119PROGRAM STEPS
GIUSEPPE LIGATO
I - CUSANO MILANINO

60586D 67-GILLILAND CORRELATION

PROGRAM MAY BE USED IN DISTILLATION PROBLEMS, TO SOLVE THE WELL-KNOWN GILLILAND EQUATION, RELATING THE REFLUX RATIO WITH THE TOTAL NUMBER OF THEORETICAL CONTACT STAGES.

107PROGRAM STEPS
GIUSEPPE LIGATO
I - CUSANO MILANINO

60587D 67-LIQUID SPARGERS

PROGRAM USES SIMPLIFIED RULES TO DESIGN LIQUID DISTRIBUTORS (SPARGERS) FOR FEED OR REFLUX TO TRAY-TYPE DISTILLATION TOWERS, TO DISPERSE THE INLET STREAM UNIFORMLY ACROSS THE TRAY. THE DISPERSED STREAM MAY BE EITHER A LIQUID OR A

60587D (CONTD)

LIQUID PLUS VAPOUR.
METRIC AND ENGLISH UNITS ACCEPTED.

139PROGRAM STEPS
GIUSEPPE LIGATO
I - CUSANO MILANINO

60588D 67-AGGREGATE MIXER

THIS PROGRAM WILL MIX TWO AGGREGATES, A AND B, IN A SUCCESSION OF DIFFERENT RATIOS,STARTING AT 1 PART OF A AND 0.1 PART OF B AND ENDING AT 1 PART OF A AND 10.0 PARTS OF B TILL THE RESULTANT SATISFIES A USER SPECIFIED ENVELLOPE WITH UPTO AND INCLUDING 7 PAIRS OF UPPER AND LOWER LIMITS.

178PROGRAM STEPS
MARK CRACKNELL
WAN - LAGOS

60589D 67-STATISTICAL ANALYSIS OF CLINICAL TRIALS

THIS PROGRAM HELPS YOU TO INTERPRET THE DATA OF RANDOMIZED CLINICAL TRIALS REQUIRING PROLONGED OBSERVATION OF EACH PATIENT.

218PROGRAM STEPS
MAURO FELLA
I - GENOVA

60590D 67-DUTCH LOTTO CHECKER

THIS PROGRAM HAS BEEN DESIGNED TO CHECK THE OUTPUT FROM THE PROGRAM "DUTCH LOTTO NUMBER GENERATOR" AGAINST THE NUMBERS DRAWN ON THE SUNDAY EVENING SPORTS PROGRAM ON NEDERLANDS TV CHANNEL.

217PROGRAM STEPS
LESLIE A TIMPERLEY
NL - ZOETERMEER

60591D 67-DUTCH LOTTO NUMBER GENERATOR

THIS PROGRAM IS WRITTEN FOR THE DUTCH LOTTERY "STICHTING DE NATIONALE SPORTTOTALISATOR" AND WILL SELECT SIX RANDOM NUMBERS FROM FORTY-ONE WITHOUT A REPEAT. ANY NUMBER OF SETS OF NUMBERS MAY BE PRODUCED AND ARE AUTOMATICALLY STORED ON A DATA CARD (MAXIMUM TEN COLUMNS PER CARD). THIS CARD CAN BE USED WITH "DUTCH LOTTO CHECKER" PROGRAM TO CHECK IF YOU HAVE A WINNING LINE.

224PROGRAM STEPS
LESLIE A TIMPERLEY
NL - ZOETERMEER

60592D 67-GAS SPARGERS

STRAIGHT-PIPE SPARGERS,USED TO DISTRIBUTE UNIFORMLY A GAS STREAM, ARE HORIZONTAL PIPES EXTENDING INTO VESSELS TO ALLOW A GAS TO ESCAPE THROUGH HOLES INTO A LOWER PRESSURE REGION. GIVEN THE GEOMETRICAL AND PHYSICAL CHARACTERISTICS OF THE SYSTEM, PROGRAM DESIGNS THE SPARGER DETERMINING THE PRESSURE PROFILE IN THE PIPE AND THE ESCAPE AREA AS A FUNCTION OF LENGTH, ASSUMING A CONSTANT RADIAL FLUX ALONG THE PIPE. ENGLISH OR METRIC UNITS ACCEPTED.

412PROGRAM STEPS
GIUSEPPE LIGATO
I - CUSANO MILANINO

60593D 67-EMULSION VISCOSITY

FOR NONMISCIBLE LIQUIDS,THE PROGRAM DETERMINES THE UNKNOWN QUANTITY, GIVEN 2 OF THE 3 VARIABLES: VISCOSITY OF EMULSION, OF DISPERSED PHASE AND CONTINUOUS PHASE.

094PROGRAM STEPS
GIUSEPPE LIGATO

60593D (CONTD)

I - CUSANO MILANINO

60594D 67-SURFACE TEMPERATURE

THE CLASSIC RELATION INCLUDING BOTH CONVECTIVE AND RADIANT HEAT FROM HOT SURFACES, IS APPLIED TO FIND THE HEAT EMITTED FROM SURFACES, THE SURFACE EMITTANCE OR FOR THE MORE DIFFICULT, INVERSE DETERMINATION OF THE SURFACE OR AMBIENT TEMPERATURE. METRIC AND ENGLISH UNITS ACCEPTED

180PROGRAM STEPS
GIUSEPPE LIGATO
I - CUSANO MILANINO

60595D 67-MINIMUM DISTILLATION TRAYS

THIS PROGRAM NEEDS ONLY THE NORMAL BOILING POINTS OF TWO COMPONENTS AND THE DESIRED DISTILLATE PURITY TO ESTIMATE THE MINIMUM NUMBER OF THEORETICAL PLATES.
METRIC AND ENGLISH UNITS ACCEPTED

077PROGRAM STEPS
GIUSEPPE LIGATO
I - CUSANO MILANINO

60596D 67-PRINCEP'S PUZZLE

HERE IS AN ARRAY OF EIGHT BITS (8 DIGITS OF THE DISPLAY), ALL SET TO "ON" INITIALLY. EACH BIT IS CONTROLLED BY A CORRESPONDING PUSHBUTTON SWITCH (KEYS (F) (A) TO (D). CAN YOU TURN ALL BITS "OFF"? OF COURSE SEVERAL CONDITIONS MUST BE SATISFIED BEFORE THE STATUS OF A BIT CAN BE CHANGED. DON'T BE VERY SURE THAT IT IS EASY; EVEN IF SOLVED CORRECTLY, IT WILL TAKE YOU 170 MOVES TO SOLVE IT.

106PROGRAM STEPS
JOHN IOANNIDIS
GR - ATHENS

60597D 67-TELEPHONE COST TIMER FOR ALL SWISS "GEBUEHRENEINHEITEN"

THIS IS A SPECIAL TELEPHONE TIMER FOR SWISS GEBUEHRENEINHEITEN. PROGRAM GIVES THE REST TIME YOU CAN SPEAK FOR THE SHOWN PRICE. AFTER STOP, YOU CAN GET ALSO THE TIME YOU HAVE SPOKEN AND THE NUMBER OF GEBUEHRENEINHEITEN.
YOU GIVE THE DISTANCE, THE HOUR AND THE DAY.

217PROGRAM STEPS
ALAIN CHAPPUIS
CH - WINTERTHUR

60598D 67-TIDAL HEIGHT INTERPOLATION

GIVEN A STARTING TIME AND INCREMENT TIME IN HOURS,MINUTES (AND SECONDS) THIS PROGRAM INTERPOLATES TIDAL HEIGHTS AUTOMATICALLY, USING THE COSINE FORMULA. THE USER ENTERS TIME/HEIGHT DATA PAIRS FROM THE ADMIRALTY TIDE TABLES, VOLUME 2 OR 3, FOR THE YEAR 1900. A MAXIMUM OF 22 DATA PAIRS MAY BE ENTERED FROM THE ATT, COVERING APPROXIMATELY 130 HOURS.

202PROGRAM STEPS
M HOOIJBERG
NL - GENDEREN

60599D 97-PATH ANALYSIS WITH UP TO 7 VARIABLES

NO. OF STEPS: 1856
PATH ANALYSIS TRIES TO DISCOVER CAUSAL STRUCTURES WITHIN RECURSIVE MODELS BY REPEATED AND STEPWISE REDUCED MULTIPLE LINEAR REGRESSION WITH STANDARDIZED VARIABLES. THIS PROGRAM CAN ALSO BE USED ONLY FOR MULTIPLE REGRESSION (7 STAND. OR NOT-STAND. VAR., INCL. STATISTICS), TO COMPUTE 7X7 INTERCORR. MATRIX OR

60599D (CONTD)

TO STANDARDIZE DATA. MULTIPLE USE OF DATA CARDS.

000PROGRAM STEPS
PETER PESCHEL
D - ESSEN

60600D 97-TWO-WAY ANALYSIS OF VARIANCE WITH REPEATED MEASURES

THE PROGRAM CARRIES OUT ANALYSIS OF VARIANCE FOR A TWO-FACTOR DESIGN WITH REPEATED MEASURES ON ONE FACTOR.THERE IS NO LIMIT ON THE NUMBER OF LEVELS OF THE BETWEEN-SUBJECT FACTOR OR THE NUMBER OF SCORES UNDER EACH COMBINATION OF LEVELS, BUT THE NUMBER OF LEVELS OF THE WITHIN-SUBJECT FACTOR IS LIMITED TO 5.PROGRAM ALSO PARTITIONS ERROR TERMS, THUS ALLOWING A CHECK ON THE HOMOGENEITY OF THE POOLED SOURCES OF VARIATION.

318PROGRAM STEPS
GRAHAM RICHARDSON
UK - LONDON

60601D 67-NAVAL BATTLE ADVANCED

ON A 10X10 GRID THE CALCULATOR PLACES 6 SHIPS BY MEANS OF COORDINATES (X,Y). YOU HAVE TO DESTROY THEM IN AS FEW GUESSES AS POSSIBLE. YOUR CALCULATOR HELPS YOU: IT INDICATES EACH TIME HOW MANY SHIPS ARE LEFT NORTH, SOUTH, EAST, WEST OF THE COORDINATES YOU HAVE PUT IN. IF YOU CAN DESTROY ALL THE SHIPS IN LESS THAN 13 GUESSES, YOU'RE VERY GOOD.

201PROGRAM STEPS
DIRK ZEGERS
B - VILVOORDE

60602D 67-ORTHOGONAL 2*2 COORD. TRANSFORMATIONS (CONGRUITY TRANSF.)

THIS PROGRAM DEALS WITH PLANAR CONGRUITY TRANSFORMATIONS. TRANSLATIONS, ROTATIONS, REFLECTIONS CAN BE CONNECTED, EVALUATED, AND ANY PRODUCT OF THEM CAN BE CLASSIFIED. MULTIPLICATION OF THE TRANSFORMATION MATRICES IS FROM LEFT OR FROM RIGHT.

222PROGRAM STEPS
WOLFGANG SEEWALD
CH - ZURICH

60603D 67-INTEGRATION TRAPEZOIDAL/ MIDPOINT AND ROMBERG

INTEGRATION OF A CONTINUOUS FUNCTION OVER AN INTERNAL ((A,B)), USING TRAPEZOIDAL RULE OR MIDPOINT FORMULA, AND ROMBERG'S ALGORITHM TO IMPROVE CONVERGENCE.THE FUNCTION TO BE INTEGRATED IS TO BE PROGRAMMED AND MAY TAKE 53 STEPS AND 6 REGISTERS.

173PROGRAM STEPS
WOLFGANG SEEWALD
CH - ZURICH

60604D 67-BETA FUNCTION

EVALUATION OF THE (COMPLETE) BETA FUNCTION B(A,B) FOR REAL VALUES OF A AND B. IF A OR B IS INTEGER AND <=0: IF 0<A<=-B OR 0<B<=-A,THE BETA FUNCTION CAN BE COMPUTED;OTHERWISE ITS VALUE IS INFINITE. METHOD:IF A, B, OR A+B IS INTEGER:RECURRENCE RELATIONS; OTHERWISE:RECURRENCE AND STIRLING'S FORMULA.

223PROGRAM STEPS
WOLFGANG SEEWALD
CH - ZURICH

60605D 67-JACOBIAN ELLIPTIC FUNCTIONS

COMPUTATION OF THE 12 JACOBIAN

60605D (CONTD)

ELLIPTIC FUNCTIONS, FOR 0<=M<=1 AND ARBITRARY REAL U, BY THE METHOD OF THE ARITHMETIC-GEOMETRIC MEAN. THE COMPLETE ELLIPTIC INTEGRAL OF FIRST KIND, K(M), IS ALSO COMPUTED.

223PROGRAM STEPS
WOLFGANG SEEWALD
CH - ZURICH

60606D 67-MEANS

GIVEN A SEQUENCE OF ARBITRARY REAL NUMBERS, THIS PROGRAM COMPUTES ARITHMETIC, HARMONIC AND GEOMETRIC MEAN, PLUS ONE MEAN OF POWER ALPHA (ALPHA REAL, TO BE SPECIFIED IN ADVANCE). IF A MEAN DOES NOT EXIST (DUE TO NEGATIVE OR ZERO DATA),THIS IS SIGNALLED. GROUPED DATA MAY BE PROCESSED, TOO.

102PROGRAM STEPS
WOLFGANG SEEWALD
CH - ZURICH

60607D 67-GENERAL 2-VAR STATISTICS AND LINEAR REGRESSION

THIS PROGRAM COMPUTES, FOR GROUPED OR UNGROUPED DATA, MEANS, STANDARD DEVIATIONS, COVARIANCE, CORRELATION COEFFICIENT, AND LINEAR REGRESSION (COEFFICIENTS AND ESTIMATIONS X->Y, Y->X).

199PROGRAM STEPS
WOLFGANG SEEWALD
CH - ZURICH

60608D 67-WILCOXON TEST 1

GIVEN NX VALUES OF X AND NY VALUES OF Y, THIS PROGRAM COMPUTES THE NUMBER OF PAIRS (XI,YJ) WITH XI<YJ, PLUS HALF THE NUMBER OF PAIRS WITH XI=YJ, PROVIDED THAT EITHER NX OR NY IS LESS THAN 20. THE PROGRAM WILCOXON TEST 2 IS NECESSARY FOR THE FINAL EVALUATION.

216PROGRAM STEPS
WOLFGANG SEEWALD
CH - ZURICH

60609D 67-WILCOXON TEST 2

GIVEN THE ORDER OF AN ARBITRARY NUMBER OF X AND Y VALUES, THIS PROGRAM COMPUTES THE WILCOXON TEST STATISTICS (NO. OF PAIRS (XI,YJ) WITH XI<YJ; RANK SUMS) AND APPROXIMATED P VALUES FOR THE HYPOTHESES: MEAN X =,<=, OR >= MEAN Y. THE PROGRAM CAN ALSO BE USED IN CONNEXION WITH WILCOXON TEST 1.

204PROGRAM STEPS
WOLFGANG SEEWALD
CH - ZURICH

60610D 67-SEABATTLE

YOU PLACE 9 SHIPS ON A 9*9 GRID; SO DOES YOUR HP. USING HIGH-PRECISION MISSILES YOU HIT THE MACHINE'S 'SEA', ONE SQUARE AT A TIME.IT WILL THEN LET YOU KNOW IF YOU HIT ANYTHING AND THEN SHOW YOU ITS MOVE. THE GAME CONTINUES UNTIL ONE OF YOU HAS LOST ALL HIS SHIPS. (THE CAL.'S HITS ARE ENTIRELY RANDOM AND IT HITS EVERY SQUARE ONLY ONCE).

224PROGRAM STEPS
JOHN IOANNIDIS
GR - ATHENS

60611D 67-3/2 SIMULTANEOUS EQUATIONS

USE THIS EXTRA-FAST PROGRAM TO SOLVE A SYSTEM OF EITHER 2 OR 3 LINEAR EQUATIONS IN 2 OR 3 UNKNOWNS RESPECTIVELY. BY SELECTING WHETHER 2 OR 3 EQ. ARE TO BE SOLVED, THERE IS NO NEED TO ENTER 1'S AND 0'S IN THE CASE OF 2 EQ. EXECUTION TIME

60611D (CONTD)

(EXCLUDING -X-PAUSES) IS 4 AND 25 SECONDS RESPECTIVELY. YOU CAN ALSO CORRECT OR MODIFY INPUTS WITHOUT RE-ENTERING ALL THE COEFFICIENTS.

209PROGRAM STEPS
JOHN IOANNIDIS
GR - ATHENS

60612D 67-TRIPLE NIMB PLUS

YOU AND 'HIM' ALTERNATELY TAKE A NUMBER OF OBJECTS 'N' FROM A GIVEN PILE 'N', EITHER MAKING FIRST MOVE. INITIAL 'N' IS 1<=N<=(N-1) IN N+ GAME, OR 1<=N<=(N-2) IN N- GAME, THEREAFTER 'N' IS 1<=N<=(3 X PREVIOUS 'N').LAST TO REMOVE FROM THE PILE IS THE WINNER, IN N+ GAME OR THE LOSER, IN N- GAME. UNLIKE SOME OTHER NIMB PROGRAMS "NO FALSE MOVES AT ALL" ARE ALLOWED BY THIS PROGRAM WITH LABELS A TO E GIVING VARIOUS FACILITIES, INCLUDING SCORE AND 'CONCEDE DEFEAT' (MUCH USED)

224PROGRAM STEPS
LAWRENCE B HARTLEY
UK - BRIERFIELD

60613D 97-NUMBER OF FUNCTIONS AND COMBINATORIAL APPLICATIONS

PROGRAM COVERS THE ELEMENTARY PARTS OF COMBINATORIAL ANALYSIS. IT PROVIDES 10 NUMERICAL FUNCTIONS OF 2 VARIABLES & 2 NUMERICAL FUNCTIONS OF ONE VARIABLE.IT CALCULATES THE NUMBER OF THE FOLLOWING FUNCTIONS: 1)ALL, 2)INJECTIVE, 3)SURJECTIVE, 4)BIJECTIVE,5)MONOTONE,6)INJECTIVE MONOTONE,7)SURJECTIVE MONOTONE. FOR THE CONVENIENCE OF THE USER A GUIDE TO 52 COMBINATORIAL PROBLEMS IS INCLUDED:DISTRIBUTIONS, OCCUPANCIES, SELECTIONS, ARANGEMENTS,PARTITIONS, WORDS, MULTISETS ETC...
10 PAGES OF DESCRIPTION

224PROGRAM STEPS
PETER LUSCHNY
D - BAD KISSINGEN

60614D 97-SETPARTITIONS, PERMUTATIONS AND DISTRIBUTIONS OF GIVEN TYP

PROGRAM CALCULATES THE NUMBER OF 1)SET-PARTITIONS OF GIVEN TYP 2)ORDERED SET-PARTITIONS OF GIVEN TYP, 3)ORDERED GENERALIZED SET-PARTITIONS OF GIVEN TYP, 4)DISTRIBUTIONS OF MULTISETS INTO UNORDERED & 5)INTO ORDERED BOXES, 6)PERMUTATIONS OF GIVEN TYP AND, 7)MULTINOMIAL COEFFICIENTS. THESE FUNCTIONS HAVE A WIDE RANGE OF APPLICATIONS. 12 PAGES PROGRAM DESCRIPTION IN ENGLISH SHOW NUMEROUS COMBINATORIAL EXAMPLES. VERY FAST COMPUTING AND PRACTICAL NO RESTRICTION ON INPUT DATA.

220PROGRAM STEPS
PETER LUSCHNY
D - BAD KISSINGEN

60615D 67-PARTITIONS AND K-PARTITIONS OF INTEGERS/LISTING & NUMBER

A PARTITION OF A POSITIVE INTEGER N IS A SET OF NONZERO, POSITIVE ITEGERS,WHOSE SUM IS EQUAL TO N. THIS PROGRAM CALCULATES THE NUMBER AND GIVES A LIST OF THE FOLLOWING CLASSES OF PARTITIONS:1)ALL PARTITIONS OF N, 2)PART. OF N WITH K PARTS 3)PART. OF N WITH AT MOST K PARTS 4)PART. OF N WITH BIGGEST PART EQUAL TO K, 5)PART. OF N WITH BIGGEST PART AT MOST EQUAL TO K. FURTHER YOU CAN CALCULATE THE NUMBER OF GENERALIZED PARTITIONS OF N WITH K PARTS.

222PROGRAM STEPS
PETER LUSCHNY
D - BAD KISSINGEN

60616D 97-INTEGER PARTITIONS UNDER THREE CONSTRAINTS

A PARTITION OF THE INTEGER N IS A SET OF NONZERO, POSITIVE INTEGERS, WHOSE SUM IS EQUAL TO N. 3 CONDITIONS CAN BE POSED ON A PARTITION: 1)THE NUMBER OF INTEGERS, 2)A LOWER BOUND AND 3) AN UPPER BOUND FOR THE INTEGER VALUES. YOU MAY INTERPRET THIS AS A DISTRIBUTION PROBLEM: YOU WANT TO DISTRIBUTE N OBJECTS INTO BOXES. YOU PRESCRIBE THE NUMBER OF BOXES, HOW MANY OBJECTS AT LEAST & HOW MANY OBJECTS AT MOST SHOULD BE PUT INTO ONE BOX. PROGRAM 1)CALCULATES THE NUMBER AND 2) GIVES THE LIST OF THE DIFFERENT PARTITIONS

213PROGRAM STEPS
PETER LUSCHNY
D - BAD KISSINGEN

60617D 97-PERFECT PARTITIONS

S IS A PERFECT PARTITION OF THE INTEGER N IF AND ONLY IF S IS A SET OF POSITIVE INTEGERS, WHOSE SUM IS EQUAL TO N,& FOR EVERY POSITIVE INTEGER M SMALER THAN N THERE EXISTS ONE AND ONLY ONE SUBSET OF S, WHOSE SUM IS EQUAL TO M. PERFECT PARTITIONS ARE USED I.E. TO DETERMINE A SET WEIGHTS FOR A WEIGHING SCALE OR TO DETERMINE A SET OF RESISTANCE BOXES FOR ELECTRICAL MEASUREMENTS IN THE MOST RATIONAL WAY. FURTHER, THEY HAVE A NATURAL RELATION TO NUMBER SYSTEMS WITH A GIVEN BASE...

149PROGRAM STEPS
PETER LUSCHNY
D - BAD KISSINGEN

60618D 97-STIRLING NUMBERS OF THE FIRST KIND

THIS PROGRAM COMPUTES STIRLING NUMBERS OF THE FIRST KIND. THESE NUMBERS ARE FREQUENTLY USED IN COMBINATORICS AND NUMERICAL ANALYSIS TO TRANSFORM FACTORIAL POLYNOMIALS TO STANDARD POLYNOMIAL FORM. MOREOVER, THE ABSOLUTE VALUES OF THE NUMBERS S(N,R) HAVE COMBINATORIAL SIGNIFICANCE. THEY GIVE THE NUMBER OF PERMUTATIONS OF A SET WITH N ELEMENTS, WHICH HAVE EXACTLY R CYCLES. THE PROGRAM (1) GIVES A LIST S(N,1),...S(N,N), OR (2) CALCULATES SINGLE VALUES.

222PROGRAM STEPS
PETER LUSCHNY
D - BAD KISSINGEN

60619D 97-HOW TO GAMBLE IF YOU MUST ROUGE ET NOIR CASINO

THE FIRST MONTE CARLO TRAINER ON A SOUND MATHEMATICAL BASIS. DUE TO A THEOREM OF DVORETZKY (DUBINS & SAVAGE), AN OPTIMAL GAMBLING STRATEGY EXISTS FOR THE ROUGE AND NOIR ROULETTE. WHILE YOU ARE GAMBLING, THE CALCULATOR PLAYS UNDER THE SAME CONDITIONS. YOU CAN COMPARE YOUR RESULTS WITH THE RESULTS OF THE OPTIMAL STRATEGY PLAYED BY THE CALCULATOR. BESIDES THE CLASSICAL ROULETTE, YOU CAN PLAY ANY FORM OF GENERALIZED ROUGE ET NOIR ROULETTE. THE HIGHLIGHT: PROBABILITY OF REACHING FIXED GOAL CAN BE CALCULATED

194PROGRAM STEPS
PETER LUTSCHNY
D - KISSINGEN

60620D 67-TRUSS 2 LOADED VERTICALLY

PROGRAM PERFORMS THE CALCULATION OF PLANE, ISOSTATIC, SYMETRY TRUSS LOADED VERTICALLY IN HIGH JOINTS ON THE WHOLE OR HALF SPAN. RESULTS: REACTIONS VA, VB AND IN SUCCESSION FIRST IS THE NUMBER, SECOND- VALUE FORCE IN TRUSS MEMBER. IN THIS PROCEDURE THERE IS NO LIMIT FOR THE NUMBER OF BARS.

60620D (CONTD)

177PROGRAM STEPS
KAZIMIERZ CADER
PL - BIELSKO-BIALA

60621D 67-TRUSS 2 LOADED NORMALLY

THIS PROGRAM PERFORMS THE CALCULATION OF PLANE ISOSTATIC, SYMETRY TRUSS LOADED NORMALLY IN HIGH JOINTS ON THE LEFT OR RIGHT SPAN. RESULTS: REACTIONS VA,VB,HA AND IN SUCCESSION FIRST IS THE NUMBER, SECOND - VALUE FORCE IN TRUSS MEMBER. IN THIS SECOND PROCEDURE THERE IS NO LIMIT FOR THE NUMBER OF BARS.

218PROGRAM STEPS
KAZIMIERZ CADER
PL - BIELSKO-BIALA

60622D 67-CATCH THE BALL!

IN A RECTANGULAR RANGE THERE ARE EIGHT HOLES. THEY ARE CLOSED AND YOU CAN OPEN THEM PRESSING THE ALPHABETIC KEYS OF THE CALCULATOR. A BALL RUNNING IN THE RANGE CROSS THE HOLES. YOU MUST BE VERY SPEEDY TO OPEN THE HOLES AND TO CATCH THE BALL. THERE IS A SCORE GAME.

224PROGRAM STEPS
LUIGI POMINI
I - CASTELLANZA

60623D 67-SPECIFIC HEAT OF CO2, H2O, O2 AND N2

THIS PROGRAM CALCULATES FOR A GIVEN TEMPERATURE THE SPECIFIC HEAT AT CONSTANT PRESSURE (CP) AND AT CONSTANT VOLUME (CV) OF CARBON DIOXIDE CO2, STEAM H2O, OXYGEN O2 AND NITROGEN N2. THE RESULT IS GIVEN IN JOULES PER KILO-MOLE-DEGREE OR IN JOULES PER KILOGRAM-DEGREE. THE TEMPERATURE MAY BE GIVEN IN DEGREES CENTIGRADES OR IN KELVINS.

170PROGRAM STEPS
JAN VUERINCKX
B - AARSCHOT

60624D 67-MEAN SPECIFIC HEAT

THIS PROGRAM CALCULATES THE MEAN SPECIFIC HEAT (CM) BETWEEN TWO GIVEN TEMPERATURES FOR CARBON DIOXIDE CO2, STEAM H2O, OXYGEN O2 AND NITROGEN N2.THE RESULT IS GIVEN IN JOULES PER KILOGRAM-DEGREE. THE TEMPERATURE LIMITS MAY BE GIVEN IN DEGREES CENTIGRADES OR IN KELVINS.

224PROGRAM STEPS
JAN VUERINCKX
B AARSCHOT

60625D 97-SOLUTION OF LITI-DIFFERENCE EQUATIONS FOR POLYNOMIAL INPUT

THE INITIAL VALUE PROBLEM FOR A LINEAR TIME-INVARIANT (LTI) RATIONAL DIFFERENCE EQUATION OF UP TO FIFTH ORDER IS SOLVED FOR POLYNOMIAL INPUTS OF UP TO FOURTH ORDER. THE PROGRAM IS USEFUL FOR DIGITAL SIMULATIONS OF CONTINUOUS LINEAR DYNAMICAL SYSTEM, DESIGN OF LINEAR SAMPLED-DATA CONTROL SYSTEMS AND ANALYSIS AND SYNTHESIS OF DIGITAL FILTERS.

217PROGRAM STEPS
FRANK DOERRSCHEIDT
D - PADERBORN

60626D 97-SOLUTION OF LTI-DIFFERENCE EQUATIONS FOR SINUSOIDAL INPUT

THE INITIAL VALUE PROBLEM FOR A LINEAR TIME-INVARIANT (LTI) DIFFERENCE EQUATION OF UP TO FIFTH ORDER IS SOLVED FOR EXPONENTIALLY DECAYING OR GROWING SINUSOIDAL INPUTS. THE PROGRAM IS USEFUL FOR

60626D (CONTD)

DIGITAL SIMULATIONS OF CONTINUOUS LINEAR DYNAMICAL SYSTEMS, DESIGN OF LINEAR SAMPLED-DATA CONTROL SYSTEMS AND ANALYSIS AND SYNTHESIS OF DIGITAL FILTERS.

210PROGRAM STEPS
FRANK DOERRSCHEIDT
D - PADERBORN

60627D 67-PSEUDOPRIMES

A PSEUDOPRIME IS THE PRODUCT OF TWO CONSECUTIVE ODD PRIMES. THIS PROGRAM FURNISHES A LIST OF PSEUDOPRIMES , STARTING FROM A GIVEN POSITIVE INTEGER. IT ALSO FINDS TWO CONSECUTIVE PSEUDOPRIMES, ONE SMALLER THAN OR EQUAL TO A GIVEN POSITIVE INTEGER, THE OTHER ONE LARGER THAN THAT INTEGER.

096PROGRAM STEPS
RAYMOND BROECKX
B - WILRIJK

60628D 67-FIVE TANGENTS CONIC

GIVEN 5 TANGENTS OF A CONIC, THIS PROGRAM FINDS ANY OTHER TANGENT WITHIN SECONDS

058PROGRAM STEPS
RAYMOND BROECKX
B - WILRIJK

60629D 67-NUCLEUS N

IN THIS GAME, WHICH IS AN EXTENSION OF DAN EVERHART'S NUCLEAR ATTACK GAME, YOU HAVE TO LOCATE N ENEMY MISSILE PLACES IN A 10 BY 10 GIRD. AFTER EACH GUESS, YOUR HP GIVES THE NUMBER OF ENEMY PLACES, THAT ARE SITUATED MORE NORTHWARDS, MORE SOUTHWARDS, MORE EASTWARDS AND MORE WESTWARDS. YOU CAN CHOOSE N FROM 1 UP TO 20.

110PROGRAM STEPS
RAYMOND BROECKX
B - WILRIJK

60630D 67-PARABOLAS WITH GIVEN FOCUS AND AXIS AND POINT

THIS PROGRAM CALCULATES THE TWO PARABOLAS WITH GIVEN FOCUS, GIVEN AXIS OF SYMMETRY AND GIVEN POINT. SUBROUTINES PROVIDE IN FINDING AS MANY POINTS OF THE CURVES AS YOU WANT.

142PROGRAM STEPS
RAYMOND BROECKX
B - WILRIJK

60631D 67-CIRCUIT-PROBLEM

A NUMBER OF UP TO TEN EQUALLY ECONOMIC CARS ARE PARKED AT DIFFERENT PLACES ON A ONE-DIRECTION CIRCUIT. THE TOTAL AMOUNT OF FUEL IS SUFFICIENT FOR ONE CAR TO RUN EXACTLY ONCE AROUND THE CIRCUIT. CAN YOU FIND THE CAR, IF ANY, WHERE A DRIVER SHOULD START AND RUN TO THE NEXT CAR, THERE ADDING ITS FUEL TO HIS OWN TANK, AND CONTINUE IN THE SAME WAY, UNTIL THE CIRCUIT HAS BEEN COMPLETED?

108PROGRAM STEPS
RAYMOND BROECKX
B - WILRIJK

60632D 67-CONJUGATE HYPERBOLAS

THIS PROGRAM CALCULATES THE COORDINATES OF THE CENTRE OF A GIVEN HYPERBOLA. FURTHERMORE IT PERMITS YOU TO FIND ANY NUMBER OF POINTS FOR THE HYPERBOLA, ITS ASYMPTOTES AND THE CONJUGATE HYPERBOLA.

131PROGRAM STEPS
RAYMOND BROECKX

60632D (CONTD)

B - WILRIJK

60633D 67-ORTHOPTIC LOCUS OF A CONIC

GIVEN A CONIC, THIS PROGRAM FINDS ITS ORTHOPTIC CIRCLE OR LINE, I.E. THE LOCUS OF THE POINTS FROM WHICH THE CONIC IS SEEN UNDER A RIGHT ANGLE.

112PROGRAM STEPS
RAYMOND BROECKX
B - WILRIJK

60634D 67-TANGENTS OF CONIC WITH GIVEN DIRECTION

GIVEN A CONIC, THIS PROGRAM FINDS THE NUMBER OF TANGENTS WITH GIVEN DIRECTION AND THEIR POINTS OF CONTACT

133PROGRAM STEPS
RAYMOND BROECKX
B - WILRIJK

60636D 67-CONIC WITH 2 GIVEN TANGENTS & THEIR CONTACT POINTS & 1 POINT

THIS PROGRAM DETERMINES A CONIC WITH 2 GIVEN TANGENTS AND THEIR POINTS OF CONTACT, GOING THROUGH A GIVEN POINT. MORECVER, YOU CAN FIND AS MANY POINTS OF THIS CONIC AS YOU LIKE.

185PROGRAM STEPS
RAYMOND BROECKX
B - WILRIJK

60637D 67-SPECIAL PLANE CURVES I

THIS PROGRAM MAKES IT POSSIBLE TO DRAW SOME HISTORICALLY IMPORTANT PLANE CURVES, SUCH AS CISSOID, STROPHOID, TRISECTRIX, CONCHOID, LINACON, CARDIOID, KAMPYLE, KAPPA, SEXTIC, RHODONEA, SPIRALS AND COCHLEOID.

128PROGRAM STEPS
RAYMOND BROECKX
B - WILRIJK

60638D 67-CONIC WITH GIVEN FOCUS AND THREE GIVEN POINTS

GIVEN A FOCUS AND 3 POINTS OF A CONIC,THIS PROGRAM FINDS THIS CONIC'S EQUATION (ORTHONORMAL BASE). MOREOVER, YOU CAN FIND AS MANY POINTS OF THIS CONIC AS YOU LIKE.

173PROGRAM STEPS
RAYMOND BROECKX
B - WILRIJK

60639D 67-CONICS WITH GIVEN FOCI AND GIVEN POINT

GIVEN THE COORDINATES OF THE 2 FOCI AND ONE POINT OF A CONIC IN AN ORTHONORMAL BASE,THIS PROGRAM FINDS THE 2 POSSIBLE CONICS, ONE HYPERBOLA AND ONE ELLIPSE, AND PERMITS TO FIND ANY NUMBER OF POINTS FOR BOTH.

204PROGRAM STEPS
RAYMOND BROECKX
B - WILRJIK

60640D 67-PASCAL LINES

GIVEN A CONIC, THIS PROGRAM PERMITS YOU TO FIND 6 OF ITS POINTS. NEXT IT FINDS THE COORDINATES OF THE 3 CORRESPONDING POINTS ON THE HEXAGON'S PASCAL LINE. PERMUTATIONS OF THE 6 CHOSEN POINTS ARE POSSIBLE, SO THAT, GIVEN ENOUGH TIME, YOU CAN FIND THE ENTIRE HEXAGRAMMA MYSTICUM

196PROGRAM STEPS
RAYMOND BROECKX
B - WILRIJK

60635 67-TANGENTS OF CONIC IN GIVEN POINTS

GIVEN A CONIC, THIS PROGRAM FINDS ITS POINTS AND CORRESPONDING TANGENTS.

110 PROGRAM STEPS
RAYMOND BROECKX
B - WILRIJK

PROGRAM ABSTRACTS

65000D 67-ERSTELLUNG EINER FUSSBALLTABELLE

DAS PROGRAMM KANN FUER EINE FUSSBALLIGA MIT BIS ZU 20 MANNSCHAFTEN AUS DEN ERGEBNISSEN DER EINZELNEN SPIELE ZU JEDEM ZEITPUNKT EINE NACH PUNKTEN UND TORDIFFERENZ GEORDNETE TABELLE BERECHNEN UND FUER JEDE MANNSCHAFT ALLE ERFORDERLICHEN INFORMATIONEN AUSGEBEN.

342PROGRAM STEPS
FRANZ-JOSEF KOLL
D - AACHEN-BRAND

65001D 67-SIEDEPUNKT UND VAKUUM

DIESES PROGRAMM BERECHNET DIE ABHAENGIGKEIT VOM SIEDEPUNKT IM VAKUUM,WENN ZWEI VON DREI GROESSEN BEKANNT SIND, NAEMLICH:
TS (SIEDEPUNKT BEI NORMALDRUCK)
TP (SIEDEPUNKT IM VAKUUM)
P (VAKUUM)

050PROGRAM STEPS
HELMUT JENDYK
D - KOELN

65002D 67-MESSWERTE FUER EVOLVENTENZAHNRAEDER NACH WILDHABER

BERECHNUNG DER MESSWERTE FUER EVOLVENTENZAHNRAEDER ZUM MESSEN UEBER MEHRERE ZAEHNE NACH WILDHABER. AUCH FUER KORRIGIERTE UND SCHRAEGVERZAHNTE RAEDER.

071PROGRAM STEPS
WALTER BICAN
A - WIEN

65003D 67-PARABEL BESTIMMT DURCH 3 PUNKTE ODER 2 PUNKTE UND EINE TANGENTE

NACH EINGABE VON 3 PUNKTEN ODER 2 PUNKTEN UND DER TANGENTENSTEIGUNG IN EINEM PUNKT, KOENNEN DIE KOEFFIZIENTEN DER QUADRATISCHEN GLEICHUNG ABGERUFEN WERDEN. ES KANN DER FUNKTIONSWERT SOWIE DIE ERSTE ABLEITUNG AN DER STELLE X UND DER X-WERT DES SCHEITELPUNKTES BERECHNET WERDEN. BEI DER BERECHNUNG DER NULLSTELLEN WERDEN REELE UND KOMPLEXE LOESUNGEN ANGEGEBEN.

191PROGRAM STEPS
CHRISTOPH GROBER
CH - THERWIL

65004D 67-VEKTORRECHNUNG

DAS PROGRAMM KANN BIS ZU 5 VEKTOREN (3-DIMENSIONAL) SPEICHERN UND FOLGENDE OPERATIONEN DURCHFUEHREN: SKALARPRODUKT, VEKTORPRODUKT, SPATPRODUKT, ADDITION VON VEKTOREN, BETRAG EINES VEKTORS,EINHEITSVEKTOR WINKEL ZWISCHEN ZWEI VEKTOREN, UMWANDLUNG VOM POLAR- IN KARTESISCHE KOORDINATEN UND UMGEKEHRT, VEKTOREN SPEICHERN.DAS PROGRAMM IST AEHNLICH DEM PROGRAMM SD-08A, ABER MAN KANN DAMIT MEHR RECHNUNGEN DURCHFUEHREN.

224PROGRAM STEPS
PETER BURGEY
D - MAXDORF

65005D 67-ALLGEMEINE GLEICHUNGEN 2. GRADES IN X UND Y

AUS DER ALLGEMEINEN GLEICHUNG
AX**2+BX**2+CX+PY+E=0
ERMITTLUNG DER MITTELPUNKTE,ACHSEN ETC VON KREISEN,ELLIPSEN,HYPERBELN UND PARABELN.

221PROGRAM STEPS
CHRISTIAN FURTER
CH - BOLL

65006D 67-US STANDARD ATMOSPHAERE

DAS PROGRAMM BERECHNET FUER EINE GEGEBENE HOEHE IN KM DEN DRUCK,DIE TEMPERATUR, DIE DICHTE UND DIE SCHALLGESCHWINDIGKEIT NACH DER US

65006D (CONTD)

STANDARD ATMOSPHAERE BIS 47 KM HOEHE.

211PROGRAM STEPS
DETLEF R SCHMITT
D - OTTOBRUNN

65007D 97-STOSSGESETZE

DIESES PROGRAMM BERECHNET FOLGENDE GROESSEN FUER DEN ELASTISCHEN STOSS ZWEIER KOERPER: GESCHWINDIGKEIT DES 1 KOERPERS VOR DEM STOSS, GESCHWINDIGKEIT DES 2 KOERPERS VOR DEM STOSS, GESCHWINDIGKEIT DES 2 KOERPERS NACH DEM STOSS, GESCHWINDIGKEIT DES 1 KOERPERS NACH DEM STOSS, MASSE DES 1 KOERPERS, MASSE DES 2 KOERPERS.AUSSER DIESEN GROESSEN WIRD BEIM UNELASTISCHEN STOSS AUCH NOCH DER ENERGIEVERBRAUCH BERECHNET.

330PROGRAM STEPS
MICHAEL TARNOWSKI
D - WIESBADEN

65008D 67-GROSSE/KLEINE HAUSNUMMER

DAS PROGRAMM STELLT UEBER EINEN ZUFALLSZAHLENGENERATOR EINSTELLIGE ZAHLEN HER, WELCHE VOM SPIELER KLASSIFIZIERT WERDEN MUESSEN. DER SPIELER MUSS ENTSCHEIDEN, OB DIE BETREFFENDE ZAHL X1000,X100,X10 ODER X1 GEZAEHLT WIRD. JEDE DIESER KALSSIFIZIERUNGEN MUSS GENAU EINMAL GEWAEHLT WERDEN, SODASS EINE MAXIMALE 4 STELLIGE ZAHL AUS 4 EINSTELLIGEN ZAHLEN RESULTIERT. MAX. 9 SPIELER. VIELE VARIATIONEN.

207PROGRAM STEPS
JOACHIM REINHARDT
D - COELBE-BUERGELN

65009D 67-MOLEKUELSTRUKTUR-ANALYSE

ES SOLL EINE 2 DIMENSIONALE MOLEKUELSTRUKTUR (4 ODER 5 ATOME) ANALYSIERT WERDEN, DIE DURCH EINEN ZUFALLSZAHLENGENERATOR (ODER EINEN 2 SPIELER) KONSTRUIERT WIRD. DER SPIELER SENDET "ROENTGENSTRAHLEN" DURCH EIN 8X8 GROSSES FELD, IN DEM SICH DAS MOLEKUEL BEFINDET. DIE STRAHLEN WERDEN ABGELENKT, ABSORBIERT,REFLEKTIERT,ODER GEHEN GERADE HINDURCH. JE MEHR ROENTGENSTRAHLEN VOM SPIELER DURCH DAS MOLEKUEL GESCHICKT WERDEN, DESTO BESSER WIRD SEIN BILD VON DER MOLEKUELSTRUKTUR. ZIEL=MIT WENIG STRAHL. STRUK.FINDEN

313PROGRAM STEPS
JOACHIM REINHARDT
D - COELBE-BUERGELN

65010D 67-SUADERE - REPERIRE

MIT DIESEM PROGRAMM HABEN SIE DIE MOEGLICHKEIT, ENTWEDER EINE VON DEM RECHNER ERSTELLTE ZAHL ZU ERRATEN, SUADERE, ODER DEN RECHNER EINE VON IHNEN ERDACHTE ZAHL FINDEN ZU LASSEN, REPERIRE.

097PROGRAM STEPS
HARMS BECKER
D - HAGEN

65011D 67-BINOMINALKOEFFIZIENTEN

DAS PROGRAM BERECHNET DIE KOEFFIZIENTEN EINES BINOMISCHEN AUSDRUCKS DER FORM (K1A+K2B)**N, WOBEI DAS PROGRAM AUCH DIE KOEFFIZIENTEN (K1 UND K2) BERUECKSICHTIGT| (IN DIE BERECHNUNG MIT EINBEZIEHT)

042PROGRAM STEPS
UWE MOENKEDIECK
D - MELLE

65012D 67-INTEGRATION NACH DER TRAPEZFORMEL

65012D (CONTD)

DAS PROGRAM LOEST BESTIMMTE INTEGRALE NACH DER TRAPEZFORMEL MIT EINER VORGEGEBENEN GENAUIGKEIT.

087PROGRAM STEPS
WOLFGANG HAUSCH
D - DARMSTADT

65013D 67-BIORHYTHMUS UND KOINZIDENZ

DAS PROGRAMM BERECHNET DIE DATEN DER 3 KURVEN DES BIORHYTHMUS: KOERPERLICHER (23 TAGE), SEELISCHER (28 TAGE) UND INTELLEKTUELLER (33 TAGE) - PERIODE,ZWISCHEN 1 MAERZ 1900 UND 28 FEBRUAR 2100. ES KANN AUCH DAS ZUSAMMENTREFFEN VON 2 DER 3 KURVEN IN EINEM VON 4 PUNKTEN (MAXIMUM, MINIMUM UND NULLDURCHGAENGE) BERECHNET WERDEN.

220PROGRAM STEPS
LEO SCHOPF
A - WIEN

65014D 67-ROULETTE MONTE CARLO

MIT DIESEM PROGRAMM KANN ROULETTE WIE IN MONTE CARLO GESPIELT WERDEN UND ZWAR AUF ZWEI ARTEN:
A-MIT SPIELTISCH, CROUPIER UND BELIEBIG VIELEN SPIELERN
B-OHNE CROUPIER UND SPIELTISCH,FUER EINEN ODER ZWEI SPIELER,WOBEI DER HP-67 FUER JEDEN DER BEIDEN SPIELER DEN GEWINNSALDO BERECHNET,UND AUCH DIE GEWINNNUMMER UND DEN EINZELGEWINN ANZEIGT.
ES KANN AUF EINE NUMMER, AUF "PAIR", "IMPAIR", "ROUGE", ODER "NOIR" GESETZT WERDEN.

158PROGRAM STEPS
ERNST BAENNINGER
CH - BAAR

65015D 67-NULLSTELLEN BELIEBIGER FUNKTIONEN

DAS PROGRAMM UNTERSUCHT EINE BELIEBIGE FUNKTION AUF EINFACHE NULLSTELLEN.

092PROGRAM STEPS
DETLEF R SCHMITT
D - OTTOBRUNN

65016D 67-KOMPLEXE OPERATIONEN

DAS PROGRAMM ADDIERT, SUBTRAHIERT, MULTIPLIZIERT UND DIVIDIERT ZWEI KOMPLEXE ZAHLEN. AUSSERDEM BILDET ES DEN KEHRWERT, DAS QUADRAT SOWIE DIE QUADRATWURZEL EINER COMPLEXEN ZAHL.

121PROGRAM STEPS
DETLEF R SCHMITT
D - OTTOBRUNN

65017D 67-UMRECHNUNGEN VON ENERGIE EINHEITEN

DAS PROGRAMM RECHNET NICHT-SI-UND SI-ENERGIE-EINHEITEN INEINANDER UM.

073PROGRAM STEPS
DETLEF R SCHMITT
D - OTTOBRUNN

65018D 67-THERMISCHES ZUSTANDSGESETZ DES IDEALEN GASES

NACH EINGABE VON 4 GROESSEN AUS DRUCK, TEMPERATUR, VOLUMEN, MASSE UND INDIVIDUELLER GASKONSTANTE BERECHNET DAS PROGRAMM DIE FEHLENDE FUENFTE GROESSE.

074PROGRAM STEPS
DETLEF R SCHMITT
D - OTTOBRUNN

65019D 67-UMRECHNUNGEN VON DRUCKEINHEITEN

65019D (CONTD)

DAS PROGRAMM RECHNET NICHT-SI-UND SI-DRUCKEINHEITEN INEINANDER UM.

084PROGRAM STEPS
DETLEF R SCHMITT
D - OTTOBRUNN

65020D 97-GLEICHUNG DRITTEN GRADES

EINE GLEICHUNG DRITTEN GRADES ZU LOESEN, IST BEDEUTEND SCHWIERIGER UND ZEITRAUBENDER ALS EINE GLEICHUNG ZWEITEN GRADES (QUADRATISCHE GLEICHUNG). DIESES PROGRAMM BERECHNET DIE REELLEN LOESUNGEN EINER SOLCHEN GLEICHUNG.

209PROGRAM STEPS
GERHARD KRIZSANITS
A - BRUNN

65021D 67-KANONISCHE STAMMBRUCHENTWICKLUNG

EINGEGEBEN WIRD EIN BRUCH A/B. VON DIESEM WIRD, FALLS DER BRUCH DANN NOCH POSITIV BLEIBT, 1/I ABGEZOGEN; DANACH WIRD ZUM NAECHSTEN I GEGANGEN. I DURCHLAEUFT DABEI DIE WERTE 1,2,3,4.. BEENDET WIRD DIE ROUTINE, WENN NACH EINER SUBTRAKTION VON 1/I GENAU 0 UEBRIGBLEIBT. DAS PROGRAMM ARBEITET NICHT MIT DEZIMALEN NAEHERUNGSWERTEN, SONDERN MIT BRUECHEN UND IST RECHT SCHNELL.
GEDRUCKT WERDEN ALLE I.

082PROGRAM STEPS
STEFAN TRCEK
D - PFORZHEIM

65022D 67-S ALS SUMME DREIER N-TER POTENZEN

DIESES PROGRAMM BERECHNET ALLE LOESUNGEN X,Y,Z DER GLEICHUNG X**N+Y**N+Z**N=S. DABEI WERDEN S UND N VORGEGEBEN UND X,Y,Z BERECHNET.

099PROGRAM STEPS
STEFAN TRCEK
D - PFORZHEIM

65023D 67-Z ALS SUMME ZWEIER N-TER POTENZEN

DIESES PROGRAM BERECHNET ALLE GANZZAHLIGEN LOESUNGEN X,Y DER GLEICHUNG Z=X**N+Y**N, WOBEI Z UND N VORGEGEBEN WERDEN.

107PROGRAM STEPS
STEFAN TRCEK
D - PFORZHEIM

65024D 67-N PRIM ZUR SPIEGELZAHL

DAS PROGRAMM BERECHNET ZAHLEN, DIE ZU IHRER SPIEGELZAHL NICHT PRIM SIND, ALSO MINDESTENS EINEN TEILER (AUSSER 1) MIT IHR GEMEINSAM HABEN.

078PROGRAM STEPS
STEFAN TRCEK
D - PFORZHEIM

65025D 67-TEILBARKEIT DURCH DIE QUERSUMME

DAS PROGRAMM BERECHNET:
1) DIE QUERSUMME EINER ZAHL
2) ERMITTELT ES ZAHLEN, DIE DURCH IHRE QUERSUMME TEILBAR SIND
3) ERMITTELT ES ZAHLEN, DIE DURCH EINE ZAHL Q TEILBAR SIND, WOBEI Q WIE FOLGT BESTIMMT WIRD: AUS JENER ZAHL WIRD SOLANGE DIE QUERSUMME GEBILDET, BIS SIE EINSTELLIG IST.

091PROGRAM STEPS
STEFAN TRCEK
D - PFORZHEIM

65026D 67-KETTENBRUCHENTWICKLUNG, PERIODE VON 1/N

65026D (CONTD)

DAS PROGRAMM ERRECHNET DIE KETTENBRUCHENTWICKLUNG EINER RATIONALEN ZAHL A/B. ES BESTIMMT DIE PERIODE UND DIE PERIODENLAENGE VON 1/N,WENN N WEDER DURCH 2, NOCH DURCH 5 TEILBAR IST.

040PROGRAM STEPS
STEFAN TRCEK
D - PFORZHEIM

65027D 67-TEILERSUMME, TEILERANZAHL

DAS PROGRAMM BERECHNET DIE SUMME UND DIE ANZAHL DER TEILER EINER BELIEBIGEN NATUERLICHEN ZAHL N ODER ALLER NATUERLICHEN ZAHLEN IN EINEM VORGEGEBENEN INTERVALL. ES ENTHAELT EINE PRINT-ROUTINE FUER DEN HP-97.

072PROGRAM STEPS
STEFAN TRCEK
D - PFORZHEIM

65028D 67-RESTSUMME

DAS PROGRAMM BERECHNET DIE SUMME ALLER RESTE, DIE BEI DER DIVISION EINER NATUERLICHEN ZAHL N DURCH DIE ZAHLEN 1,2,3,...,N-1,N ENTSTEHEN. PRINT / R/S-MODUS.

069PROGRAM STEPS
STEFAN TRCEK
D - PFORZHEIM

65029D 67-JOSEPHUS PERMUTATION

N PERSONEN (N=95) STELLEN SICH IM KREIS AUF. JEDE M-TE (M BELIEBIG) WIRD HERAUSGENOMMEN. PROGRAMM BERECHNET, AN WELCHER STELLE EINE PERSON ALS X-TE HERAUSGENOMMEN WIRD ZB: WO MAN SICH HINSTELLEN MUSS, UM ALS LETZTE UEBRIGZUBLEIBEN. RECHENZEIT HAENGT IM WESENTLICHEN VON N UND NUR UNWESENTLICH VON M AB

194PROGRAM STEPS
STEFAN TRCEK
D - PFORZHEIM

65030D 67-GERADLINIGE BEWEGUNG MIT KONSTANTER BESCHLEUNIGUNG

SIND BEI DER GERADLINIGEN BEWEGUNG MIT KONSTANTER BESCHLEUNIGUNG 2 DER 4 VARIABLEN WEG, GESCHWINDIGKEIT, BESCHLEUNIGUNG,ZEIT GEGEBEN,BERECHNET DAS PROGRAMM DIE RESTLICHEN BEIDEN. DIE VARIABLEN WERDEN UEBER 4 PROGRAMMADRESSTASTEN EINGEGEBEN UND BERECHNET, ALSO DOPPELBELEGUNG JEDER P.A.T. MIT EINGABE UND AUSGABE EINER VARIABLEN. KORREKTUREN UND BENUTZUNG EINER KONSTANTEN SEHR EINFACH.

179PROGRAM STEPS
STEFAN TRCEK
D - PFORZHEIM

65031D 67-VOLLELASTISCHER GERADER STOSS ZWEIER KUGELN

EINE KUGEL, DIE VOR DEM STOSS DIE GESCHWINDIGKEIT V1 UND DANACH U1 HAT, STOSSE MIT EINER ZWEITEN KUGEL ZUSAMMEN, DIE VOR DEM STOSS DIE GESCHWINDIGKEIT V2 UND DANACH U2 HAT. SIND ZWEI BELIEBIGE GESCHWINDIGKEITEN DIESER 4 GEGEBEN UND AUSSERDEM NOCH DIE MASSEN ODER DAS MASSENVERHAELTNIS DER KUGELN, SO BERECHNET DAS PROGRAMM DIE RESTLICHEN ZWEI GESCHWINDIGKEITEN.

123PROGRAM STEPS
STEFAN TRCEK
D - PFORZHEIM

65032D 67-PROFILFLAECHEN,-KUBATUREN

BERECHNUNG VON FLAECHEN MIT DER TRAPEZFORMEL UND VON VOLUMINA ZWISCHEN PARALLELEN FLAECHEN MIT GEGEBENEM ABSTAND.

65032D (CONTD)

091PROGRAM STEPS
FRITZ MAREK
A - WIEN

65033D 97-GLEITKREISBERECHNUNG NACH FELLENIUS MIT 3 ERDSCHICHTEN

DAS PROGRAMM BERECHNET DIE GLEITSICHERHEIT EINES BAUGRUBENABSCHLUSSES NACH DEM VERFAHREN FELLENIUS (KREISFOERMIGE GLEITFLAECHEN).
3 VERSCHIEDENE BODENARTEN UND DIE KOHAESION SOWIE DIE AUFLAST AUF DEM TERRAIN KOENNEN BERUECKSICHTIGT WERDEN. DIE BERECHNUNG DIENT ZUR BESTIMMUNG DER FREIEN LAENGE VON BODENANKERN.
EINE FORTSETZUNG ZUR BERECHNUNG DER ANKERKRAFT IST IN BEARBEITUNG.

223PROGRAM STEPS
HANSPETER BERNET
CH - BERN

65034D 67-LEITZAHLEN-RECHNER

ERRECHNET DEN 3 WERT AUS 2 EINGEGEBENEN WERTEN, LEITZAHL, BLENDE, ENTFERNUNG.
ERRECHNET DIE NEUEN GROESSEN FUER LEITZAHL, BLENDE, ENTFERNUNG BEI AENDERUNG DER FILMEMPFINDLICHKEIT.

052PROGRAM STEPS
HEINZ WEHNER
D - WEDEL

65035D 67-UNIVERSELLE ZWEIFACHREGRESSION

DAS PROGRAMM BERECHNET DIE MULTIPLE REGRESSION Z=A+BX+CY NACH DER METHODE DER KLEINSTEN QUADRATE.
ES IST SO GESTALTET, DASS LEICHT KOMPLIZIERTE FUNKTIONEN ZU BERECHNEN SIND.GEZEIGT WIRD EIN BEISPIEL: Y=EXP(A+B(X**2+2LNX-4X)+C(LNX)**2).

163PROGRAM STEPS
HORST VOELZ
DX-BERLIN

65036D 67-KOMPLEXE WIDERSTAENDE UND BRUECKEN

DAS PROGRAMM BERECHNET DIE REIHEN - UND PARALLEL - SOWIE BELIEBIGE ZUSAMMENSCHALTUNG VON KOMPLEXEN WIDERSTAENDEN. DAS ERGEBNIS KANN ALS KOMPLEXE ZAHL, ABER AUCH ALS PARALLEL - ODER REIHENSCHALTUNG AUS EINEM REELLEN UND EINEM BLINDWIDERSTAND ERHALTEN WERDEN. BEI BRUECKENSCHALTUNGEN IST DIE BERECHNUNG DES VIERTEN UNBEKANNTEN WIDERSTANDES IN DERSELBEN WEISE MOEGLICH

214PROGRAM STEPS
HORST VOELZ
DX - BERLIN

65037D 67-MEHRFACHE POTENZFUNKTION UND SCHWINGKREIS

VON DEN VIER VARIABLEN X,Y,Z,T DER FUNKTION X=A*(Y**B)*(Z**C)*(T**D) WIRD EINE BELIEBIGE AUS DEN ANDEREN DREI BERECHNET. VORPROGRAMMIERT IST DER ZUSAMMENHANG ZWISCHEN G,R,L,C BEI PARALLEL-UND REIHENSCHWINGKREISEN.WEITER IST DIE RESONANZFREQUENZ DAS AMPLITUDENVERHAELTNIS,DIE BANDBREIT UND DIE FREQUENZVERSCHIEBUNG BERECHENBAR.

138PROGRAM STEPS
HORST VOELZ
DX - BERLIN

65038D 67-WAEHLBARE REGRESSION UND FIT

PROGRAMM BERECHNET DIE REGRESSION ZU Y=A+BX;Y=A.EXP B*X;Y=A+B LNX UND G=A*X**B GLEICHZEITIG BEI EINMALIGER EINGABE DER WERTEPAARE. ES WERDEN DIE VIER KORRELATIONSKOEFFIZIENTEN ANGEZEIGT. UEBER EINEN KODE

65038D (CONTD)

KANN JEDE FUNKTION AUSGEWAEHLT UND DIE ZUGEHOERIGEN KOEFFIZIENTEN BESTIMMT, SOWIE DIE REGRESSION DURCHGEFUEHRT WERDEN. EIN WECHSEL ZWISCHEN DEN FUNKTIONEN IST BELIEBIG MOEGLICH,WORTE KOENNEN BELIEBIG HINZUGEFUEGT UND ENTFERNT WERDEN. STANDARDFEHLER UND T-TEST IST MOEGLICH.

222PROGRAM STEPS
HORST VOELZ
DX - BERLIN

65039D 67-MAGNETBANDSPEICHERUNG

FUER DEN FREQUENZGANG DER MAGNETBANDSPEICHERUNG EXISTIEREN SECHS WESENTLICHE GLEICHUNGEN,DIE EINZELN ODER MULTIPLIKATIV VERKNUEPFT IMMER WIEDER BENOETIGT WERDEN. DAS PROGRAMM GESTATTET IHRE EINZELNEN ODER BELIEBIGER KOMBINATION MULTIPLIKATIV MITEINANDER VERKNUEPFTEN WERTE FUER EINE FREQUENZ BZW WELLENLAENGE SOWIE ITERATIV ALS FREQUENZGANG ZU BERECHNEN.

203PROGRAM STEPS
HORST VOELZ
DX - BERLIN

65040D 67-VOLLSTAENDIGE ELLIPTISCHE INTEGRALE 1 UND 2 ART

INTEGRALE WERDEN MIT EINER SPEZIELLEN REIHENENTWICKLUNG AUF 2*10**-8 GENAU IN 7 SEKUNDEN BERECHNET. DIE DATEN BEFINDEN SICH AUF EINER ZUSAETZLICHEN DATENKARTE.

043PROGRAM STEPS
HORST VOELZ
DX - BERLIN

65041D 67-ROEMISCH-ARABISCHE ZAHLEN

MIT DEM PROGRAMM KOENNEN ROEMISCHE IN ARABISCHE ZAHLEN UND UMGEKEHRT UMGEWANDELT WERDEN. FUER DIE ROEMISCHE ZAHLEN SIND ZUR EINGABE SPEZIELLE LRL UND FUER DIE ANZEIGE EIN EINGAENGER CODE VORGESEHEN.

175PROGRAM STEPS
HORST VOELZ
DX - BERLIN

65042D 67-NETZTRANZFORMATION

MIT NAEHERUNGSFORMELN WERDEN AUS DER PRIMAERSPANNUNG UND DEN SEKUNDAERSPANNUNGEN UND -STROEMEN BERECHNET: EISENQUERSCHNITT, PRIMAERSTROM, -WINDUNGSZAHL UND -DRAHTDURCHMESSER SOWIE FUER DIE BIS ZU 9 MOEGLICHEN SEKUNDAERWINDUNGEN: WINDUNGSZAHLEN UND DRAHTQUERSCHNITTE UND SCHLIESSLICH DER WICKELRAUM. DIE WERTE SIND IM RECHNUNGSABLAUF BEEINFLUSSBAR.

108PROGRAM STEPS
HORST VOELZ
DX - BERLIN

65043D 67-BODEDIAGRAMM ORTSKURVE OFFENE UND GESCHLOSSENE SCHLEIFE

DIE FUNKTION G(S) KANN DURCH DIE ZAEHLER-NENNER-POLYNOME ODER DIE POL-NULLSTELLEN-FORM GEGEBEN SEIN. FUER BEIDE EXISTIEREN EINGABEROUTINEN. DER KOMPLEXE FREQUENZGANG WIRD FUER EINE FREQUENZ ODER FUER EINE ADDITIVE BZW MULTIPLIKATIVE FREQUENZFOLGE BERECHNET. DIE AUSGABE KANN IN KARTESISCHEN ODER POLARKOORDINATEN, AUCH IN DB WAHLWEISE ERFOLGEN. FERNER IST DER FREQUENZGANG FUER EINE GESCHLOSSENE SCHLEIFE BERECHENBAR.

224PROGRAM STEPS
HORST VOELZ
DX - BERLIN

65044D 67-ZAHLENKETTE - CHAIN

-IN DIESEM SPIEL HABEN SIE DIE AUFGABE, EINE IMMER LAENGER WERDENDE ZAHLENKETTE OHNE FEHLER ZU WIEDERHOLEN. SIE KOENNEN DIE STELLENZAHL ZWISCHEN 1 (LEICHT) UND 10 (SCHWIERIG) WAEHLEN. DAS SPEIL TRAINIERT KONZENTRATION UND GEDAECHTNIS.
-IN THIS NICE GAME YOU HAVE THE ASSIGNMENT TO REPEAT AN INCREASING CHAIN OF NUMBERS WITHOUT MISTAKES. YOU CAN CHOOSE THE DIGITS FROM 1 (EASY) TO 10 (DIFFICULT). THE GAME IS WELL SUITED TO TRAIN CONCENTRATION AND MEMORY.

062PROGRAM STEPS
RALPH DIETER
D - WEINSTADT

65045D 67-BERECHNUNG DES SPHAERISCHEN DREIECKS (SSW,WWS)

DAS PROGRAMM BERECHNET DIE VOLLSTAENDIGE AUFLOESUNG VON SPHAERISCHEN DREIECKEN, BEI DENEN ZWEI SEITEN UND DER GEGENWINKEL EINER SEITE, BZW EINE SEITE MIT EINEM ANWINKEL UND DEM GEGENWINKEL BEKANNT SIND.

224PROGRAM STEPS
WOLFGANG HAUSCH
D - DARMSTDT

65046D 67-BERECHNUNG DES SPHAERISCHEN DREIECKS (SWS,WSW)

DAS PROGRAMM BERECHNET DIE VOLLSTAENDIGE AUFLOESUNG VON SPHAERISCHEN DREIECKEN, BEI DENEN ZWEI SEITEN UND DER EINGESCHLOSSENE WINKEL, BZW EINE SEITE UND DIE BEIDEN ANWINKEL BEKANNT SIND.

176PROGRAM STEPS
WOLFGANG HAUSCH
D - DARMSTADT

65047D 67-BERECHNUNG DES SPHAERISCHEN DREIECKS (SSS,WWW)

DAS PROGRAMM BERECHNET DIE VOLLSTAENDIGE AUFLOESUNG VON SPHAERISCHEN DREIECKEN, BEI DENEN ALLE DREI SEITEN BZW ALLE DREI WINKEL BEKANNT SIND.

204PROGRAM STEPS
WOLGANG HAUSCH
D - DARMSTADT

65048D 67-DREIECKSBERECHNUNGEN 1

SIND DIE KOORDINATEN DER ECKPUNKTE EINES DREIECKS IN DER EBENE GEGEBEN, SO BERECHNET DIESES PROGRAMM DIE KOORDINATEN DES SCHWERPUNKTS, DIE FLAECHE, DIE LAENGE DER SEITEN, HOEHEN, SCHWERSTRECKEN, UND DER WINKELSYMMETRALEN, SOWIE DIE DREI WINKEL DES DREIECKS. MIT HILFE DER PROGRAMME DREIECKSBERECHNUNGEN 2 UND DREI SIND WEITERE BERECHNUNGEN MOEGLICH.

169PROGRAM STEPS
PETER BURGEY
D - MAXDORF

65049D 67-DREIECKSBERECHNUNGEN 2

DAS PROGRAMM BERECHNET DIE KOEFFIZIENTEN A,B UND C FUER DIE GLEICHUNGEN DER WINKELSYMMETRALEN, DER SEITEN, UND DER SCHWERLINIEN IN DER FORM A*X+B*Y+C=0.
AUSSERDEM BERECHNET ES DEN INKREISRADIUS RHO, SOWIE DIE KOORDINATEN DES INKREISMITTELPUNKTS. ZUM ABLAUF IST ES JEDOCH NOETIG, DASS VORHER EIN TEIL DER DREIECKSBERECHNUNGEN 1 DURCHGEFUEHRT WERDEN.

204PROGRAM STEPS
PETER BURGEY
D - MAXDORF

65050D 67-DREIECKSBERECHNUNGEN 3

DAS PROGRAMM BERECHNET DIE KOEFFIZIENTEN A,B,C FUER DIE GLEICHUNGEN DER HOEHENLINIEN UND DER SEITENSYMMETRALEN IN DER FORM A*X+B*Y+C=0. AUSSERDEM BERECHNET ES DIE KOORDINATEN DES HOEHENSCHNITTPUNKTS, SOWIE DES UMKREISMITTELPUNKTS UND DEN UMKREISRADIUS. ZUM ABLAUF IST ES JEDOCH NOETIG, DASS EIN TEIL DER DREIECKSBERECHNUNGEN 1 VORHER DURCHGEFUEHRT WIRD.

177PROGRAM STEPS
PETER BURGEY
D - MAXDORF

65051D 67-WAERMEUEBERGANGSZAHLEN BEI WASSERSTROEMUNG

PROGRAMM EIGNET SICH ZUR WAERMETECHNISCHEN KONTROLLE VON BETRIEBENEN WAERMEAUSTAUSCHERN. FOLGENDE MESSWERTE MUESSEN BEKANNT SEIN: STROEMUNGSGESCHWINDIGKEIT DES WASSERS, MITTLERE WASSERTEMPERATUR, WAERMESTROMDICHTE,LAENGE & GLEICHWERTIGER DURCHMESSER DES STROEMUNGS KANALS.AUSGEDRUCKT WERDEN DIE MITTLERE TEMPERATURDIFFERENZ ZWISCHEN WASSER-UND WANDTEMPERATUR,MITTLERE WANDTEMPERATUR, RE-ZAHLEN & DER WAERMEUEBERGANGSKOEFFIZIENT.MASSEINHEITEN NACH SI. WAERMESTROMRICHTUNG WIRD BERUECKSICHTIGT.

202PROGRAM STEPS
ANDRAS ILLYES
H - SZEKESFEHERVAR

65052D 97-FLAECHENMOMENTE DUENNWANDIGER OFFENER QUERSCHNITTE

DIESES PROGRAMM BERECHNET DEN SCHWERPUNKT, SCHUBMITTELPUNKT, WOELBORDINATEN, TRAEGHEITSMOMENTE, HAUPTTRAEGHEITSMOMENTE,HAUPTACHSEN, WOELBMOMENTE UND WOELBWIDERSTAND EINES BELIEBIGEN, DUENNWANDIGEN, OFFENEN, EINFACH ZUSAMMENHAENGENDEN QUERSCHNITTES.

215PROGRAM STEPS
PROMPER REINHARD
A - SALZBURG

65053D 67-LENKRAKETE

IN EINEM 2-DIMENSIONALEN KOORDINATENSYSTEM MUESSEN SIE MIT HILFE DER LENKRAKETE VERSUCHEN, DAS FEINDLICHE FLUGZEUG ZU TREFFEN.

224PROGRAM STEPS
CHRISTIAN FURTER
CH - BOLL

65054D 67-3-DIMENSIONALE VEKTORRECHNUNG KARTE 1

BERECHNUNG VON :
KREUZ- UND SKALARPRODUKT; SCHNITTWINKEL; BETRAG; EBENE AUS DREI PUNKTEN; UMFORMUNG PARAMETERDARSTELLUNG IN EBENEN - GLEICHUNG; RECHTWINKLIGE KOORDINATEN IN POLARKOORDINATEN UND UMGEKEHRT.

220PROGRAM STEPS
CHRISTIAN FURTER
CH - BOLL

65055D 67-DIMENSIONALE VEKTORRECHNUNGEN KARTE 2

BERECHNUNGEN VON :
DISTANZ PUNKT ZU EBENE,
SCHNITTPUNKT VON 2 GERADEN;
PARAMETERDARSTELLUNG IN EBENENGLEICHUNG.

212PROGRAM STEPS
CHRISTIAN FURTER
CH - BOLL

65056D 67-3-DIMENSIONALE VEKTORRECHNUNGEN KARTE 3

PROGRAM ABSTRACTS

65056D (CONTD)

BERECHNUNG VON :
UMFORMUNG PARAMETERDARSTELLUNG IN EBENENGLEICHUNG;
DURCHSTOSSPUNKT GERADE - EBENE;
SCHNITTGERADE VON 2 EBENEN.

222PROGRAM STEPS
CHRISTIAN FURTER
CH - BOLL

65057D 67-3-DIMENSIONALE VEKTORRECHNUNGEN KARTE 4

BERECHNUNG VON :
VOLUMEN VON QUADER UND PYRAMIDE GEGEBEN DURCH PUNKTE OD. VEKTOREN;
UMFORMUNG PARAMETERDARSTELLUNG IN GLEICHUNG; NORMALENVEKTOR;
ZWISCHENWINKEL VON 2 EBENEN;
FLAECHE PARALLELOGRAMM UND DREIECK.

222PROGRAM STEPS
CHRISTIAN FURTER
CH - BOLL

65058D 67/97-FEIERTAGE/HOLIDAYS

BERECHNUNG DES OSTERSONNTAGS UND VIERER WEITERER BEWEGLICHER FESTE, SOWIE BERECHNUNG DES WOCHENTAGS FUER DEN ERSTEN JANUAR, 24STEN DEZ. UND SECHS WEITERE TAGE, FUER DIE JAHRE 1700 BIS 2399.

211PROGRAM STEPS
WOLFGANG SEEWALD
CH - ZURICH

65059D 67-MOLEKUELMASSE UND ELEMENTAR-ANALYSE

DAS PROGRAMM BERECHNET ANHAND DER SUMMENFORMEL DIE MOLEKUELMASSE EINER VERBINDUNG SOWIE DEN PROZENTUALEN ANTEIL DER BETEILIGTEN ELEMENTE. DABEI KOENNEN 44 ELEMENTE ERFASST WERDEN. DIE BENOETIGTEN ATOMMASSEN SIND AUF EINER EINZIGEN DATENKARTE ABGESPEICHERT.

142PROGRAM STEPS
REINHARD GRENZ
D - DACHAU

65060D 97-SPANNUNGS - DEHNUNGSDIAGRAMM VON BETON GEM. RI 34/SIA 162

DAS PROGRAMM BERECHNET DIE WERTE DER SPANNUNGEN ALS FUNKTION DER DEHNUNGEN, DEN VOELLIGKEITSKOEFFIZIENTEN UND DIE SCHWERPUNKTLAGE DES SPANNUNGSDIAGRAMMS.
GRUNDLAGE : RICHTLINIE 34 ZUR NORM SIA NR 162.

099PROGRAM STEPS
ERNST STUDER
CH - 8002 ZURICH

65061D 97-BRUCHWIDERSTAND STAHLBETON-RECHTECK, OHNE DRUCK ARMIERUNG

PROGRAMM BERECHNET BRUCHMOMENT EINES STAHLBETON-RECHTECKQUERSCHNITTES OHNE DRUCKARMIERUNG GEMAESS RICHTLINIE 34 ZUR SIA NORM 162.
DIE VON DER NORM AUFERLEGTEN BESCHRAENKUNGEN WERDEN GEMELDET.

096PROGRAM STEPS
ERNST STUDER
CH - ZURICH

65062D 97-BRUCHWIDERSTAND STAHLBETON-RECHTECK MIT DRUCKARMIERUNG

PROGRAMM 4301 BERECHNET GRUNDLAGEN ZUR ERMITTLUNG DES BRUCHWIDERSTANDES EINES STAHLBETON-RECHTECKQUERSCHNITTES MIT DRUCKARMIERNG,GEMAESS RICHTLINIE 34 ZUR SIA-NORM 162.
FORTSETZUNG MIT PROGRAMM NR 4302: BERECHNUNG DES BRUCHMOMENTES.
DIE VON DER NORM AUFERLEGTEN BESCHRAENKUNGEN WERDEN GEMELDET.

65062D (CONTD)

221PROGRAM STEPS
ERNST STUDER
CH - ZURICH

65063D 67-ERDUNG UND POTENTIALVERLAUF

DAS PROGRAMM BERECHNET DIE AUSBREITUNGSWIDERSTAENDE UND DEN POTENTIALVERLAUF AN DER ERDOBERFLAECHE FUER BAND- UND STABERDER.

188PROGRAM STEPS
LUDWIG KOLB
D - GEISLINGEN

65064D 67-STUECKWEISE LIN. FUNKTIONEN

DAS PROGRAMM ERMOEGLICHT DIE BERECHNUNG VON STUECKWEISE LINEAREN FUNKTIONEN IN GESCHLOSSENER FORM.

069PROGRAM STEPS
CHARLES GEISER
CH - ENNETBADEN

65065D 67-ELEMENTARANALYSE

DAS PROGRAMM BERECHNET DIE VERHAELTNISZAHLEN NC, NH, NO SOWIE DIE MOLMASSE M EINER ORGAN. SUBSTANZ BEI VERBRENNUNG. IST DIE MOLMASSE BEKANNT, SO WIRD DIE BRUTTOFORMEL BERECHNET.

130PROGRAM STEPS
HEINZ WEHNER
D - WEDEL

65066D 67-BIORHYTMUS

MIT DIESEM PROGRAMM, NUR 112 SCHRITTE, KOENNEN SIE IHRE PHYSISCHE BELASTUNGSMOEGLICHKEIT, IHRE EMOTIONALE EMPFINDUNG UND IHRE GEISTIGE KAPAZITAET AN EINEM TAG BESTIMMEN.

112PROGRAM STEPS
HARMS BECKER
D - HAGEN

65067D 67-EIN-PARAMETER-REGRESSION

FUER SIEBEN TYPISCHE FUNKTIONEN MIT EINEM FREIEN PARAMETER WERDEN NACH DER METHODE DER KLEINSTEN QUADRATE DIE KORRELATIONSKOEFFIZIENTEN BEI EINER EINGABE BERECHNET. DANN KANN FUER JEDE FUNKTION DER PARAMETER BERECHNET WERDEN UND EINE REGRESSION ERFOLGEN.ZU JEDER ZEIT KOENNEN WEITERE MESSWORTE HINZUGEFUEGT BZW ENTFERNT WERDEN.

223PROGRAM STEPS
HORST VOELZ
DX - BERLIN

65068D 67-9 KURVENANPASSUNGEN UND REGRESSIONEN

AUS DER FUNKTION Y=A+BX WERDEN 9 FUNKTIONEN ABGELEITET. SIE ENTSTEHEN INFOLGE VON X; 1/X; LNX UND Y; 1/Y; LNY UND DEREN KOMBINATIONEN. MESSWERTE WERDEN EINMAL EINGEGEBEN, DANN ALLE KORRELATIONSKOEFFIZIENTEN BESTIMMT, DANN KANN FUER JEDE FKT. A V. B BERECHNET U REGRESSION ERFOLGEN. ZU JEDEM ZEITPUNKT KOENNEN MESSWERTE HINZUGEFUEGT ODER ENTFERNT WERDEN.

442PROGRAM STEPS
HORST VOELZ
DX - BERLIN

65069D 67-HF-LUFTSPULEN

PROGRAMM BERECHNET AUS GEGEBENEN PARAMETERN, DEN JEWEILS FEHLENDEN. PARAMETER SIND: INDUKTIVITAET, WINDUNGSZAHL;MITTLERER SPULENDURCHMESSER, SPULENBREITE UND -HOEHE.

65069D (CONTD)

PROGRAMM IST FUER NAHEZU ALLE SPULENFORMEN GEEIGNET. IM PROGRAMM IST WEITER ENTHALTEN DAS AUFFINDEN DES FEHLENDEN PARAMETERS VON: RESONANZFREQUENZ, INDUKTIVITAET, KAPAZITAET.

222PROGRAM STEPS
HORST VOELZ
DX - BERLIN

65070D 67-LAUFZEIT VON SCHALTUNGEN AUS POLE UND NULLSTELLEN

LAUFZEIT VON SCHALTUNGEN WIRD AUS DEM PN-PLAN BERECHNET. EINGEGEBEN WERDEN:PARAMETER DER POLE UND NULLSTELLEN; KONJUGIERT KOMPLEXE ALS BIQUADRATISCHER AUSDRUCK ODER EINFACH IN REALTEIL U. IMAGINAERTEIL. BIS ZU 18 POLE BZW NULLSTELLEN WERDEN GESPEICHERT.FREQUENZEINGABE IST MOEGLICH: EINZELN BZW AUTOMATISCH IN ADDITIVEN ODER MULTIPLIKATIVEN STUFEN.

128PROGRAM STEPS
HORST VOELZ
DX - BERLIN

65071D 67-CAUER-TIEFPASS-UMRECHNUNGEN

DIE FUENF PARAMETER:GRAD,DURCHLASS, SPERFREQUENZ UND DIE BEIDEN WELLIGKEITSGRENZEN BILDEN KERN DES PROGRAMMES. AUS BELIEBIGEN 4 KANN JEWEILS DER FEHLENDE BERECHNET WERDEN. FERNER SIND ENTHALTEN UMRECHNUNG ZWISCHEN DB UND NP, BETRIEBS- UND ECHODAEMPFUNG. DAS PROGRAMM IST IN DER GENAUIGKEIT WAEHLBAR UND SCHNELL.ES IST EIN UNMITTELBARER UEBERGANG ZUM PROGRAMM CAUER-TIEFPASS-POLE-NULLSTELLEN MOEGLICH.

222PROGRAM STEPS
HORST VOELZ
DX - BERLIN

65072D 67-CAUER-TIEFPASS-FILTER--NULLSTELLEN UND POLE

PROGRAMM BERECHNET AUS MINIMALER UND MAXIMALER DAEMPFUNG IN DB UN DER ORDNUNG (GERADE UND UNGERADE) ALLE CAUERPARAMETER, DIE TYPISCHEN NORMIERTEN FREQUENZEN, SOWIE DIE PARAMETER DER NULLSTELLEN UND POLE. PROGRAMM IST RECHT SCHNELL.PROGRAMM "CAUER-TIEFPASS-UMRECHNUNGEN" KOMPATIBEL HIERZU.

220PROGRAM STEPS
HORST VOELZ
DX - BERLIN

65073D 67-UMKEHRUNG VON POTENZREIHEN 8 GRADES

PROGRAMM IST EINE WEITERENTWICKLUNG VON 51661. NEBEN DER UMKEHRUNG IST JETZT AUCH DAS HORNERSCHEMA ZUR BERECHNUNG VON WERTEN ENTHALTEN.DADURCH LASSEN SICH AUCH ZUSAETZLICH KONSTANTE WERTE BERUECKSICHTIGEN.
ALSO Y=Y0+AX+BX**2+CX**3+... HX**8 IN X=-X0+AY+BY**2+CY**3+... +HY**8 UND WIEDER ZURUECK.

224PROGRAM STEPS
HORST VOELZ
DX - BERLIN

65074D 67-DISPLACEMENT NACH 2ND MM-METHODE

FOLGENDES PROGRAMM ERRECHNET:
1-DIE GEMITTELTEN TIEFGAENGE BIS ZUM "2ND MEAN OF MEANS"-TIEFGANG
2-DURCH- ODER AUFBIEGUNG DES SCHIFFES
3-DIE ENTSPRECHENDE 1 UND 2 TRIMMKORREKTUR
4-DAS DISPLACEMENT FUER DIE GEMESSENE SEEWASSERDICHTE

218PROGRAM STEPS
RUDOLF KREUTZER

65074D (CONTD)

D - TANGSTEDT

65075D 97-NACA-STANDART TRAGFLUEGELPROFILE

DIESES PROGRAMM BERECHNET DIE KOORDINATEN FUER TRAGFLUEGELPROFILE DER NACA-STANDART-REIHE, WOBEI NUR DIE PROFILNUMMER UND DIE LAENGE DES PROFILS EINZUGEBEN SIND. DIESES PROGRAMM ARBEITET MIT EINER NAEHERUNGSFORMEL UND BENOETIGT DESHALB KEINE DATENKARTE.

224PROGRAM STEPS
ADALBERT LINDMEIER
D - STEINACH

65076D 97-TTL OPEN COLLECTOR LASTWIDERSTAND-BERECHNUNG

DAS PROGRAMM BERECHNET DIE UNTERE UND DIE OBERE GRENZE DES LASTWIDERSTANDES FUER TTL-GATTER MIT OPEN COLLECTOR-AUSGANG IN ABHAENGIGKEIT VON DER SPEISESPANNUNG, DER ANZAHL DER SPEISENDEN AUSGAENGE SOWIE DER ANGESCHLOSSENEN EINGAENGE.

062PROGRAM STEPS
ADALBERT LINDMEIER
D - STEINACH

65077D 67-RESISTANCE-CHECK

DIESES PROGRAMM ERMITTELT AUS DER GESPEICHERTEN E12-REIHE, DIE KOMBINATION VON WIDERSTAENDEN, DIE BEI PARALLELSCHALTUNG EINEM VORGEGEBENEN RGSOLL ENTSPRECHEN. AUSSERDEM KANN DAMIT EIN NACH DEM INTERNATIONALEN FARBCODE GEKENNZEICHNETER WIDERSTAND IN SEINEM WERT BESTIMMT WERDEN, BZW EIN GEGEBENER WIDERSTANDSWERT IN DEN FARBCODE ZERLEGT WERDEN.

224PROGRAM STEPS
DIETER FLECK
D - HILDEN

65078D 67-SCHIFFSWIDERSTAND

DIESES PROGRAMM DIENT DER BETRIEBSKONTROLLE VON SCHIFFEN. HAUPTERGEBNISSE SIND: SCHIFFSWIDERSTAND UND PROPELLERWIRKUNGSGRAD.

170PROGRAM STEPS
WERNER HINTZE
D - HAMBURG

65079D 67-DEUTSCHES HARMONISCHES GEZEITENKONSTANTENVERFAHREN

DAS HARMONISCHE VERFAHREN IST NACH DEN GEZEITENTAFELN DES DHI'S AUFGEBAUT. ES BEINHALTET ALLE 10 TEILTIDEN. DIE LFD AUSGABE ERFOLGT IN STUNDEN UND GEZEITENHOEHEN IN CM. HOCH- UND NIEDRIGWASSER WERDEN SOMIT ANGEGEBEN. DIE HAFENKONSTANTEN KOENNEN AUF EINER DATENKARTE GESPEICHERT WERDEN.

224PROGRAM STEPS
LUTZ LEWKE
D - HAMBURG

65080D 67-ROMBERG INTEGRATION

DIESES PROGRAMM BERECHNET DIE FLAECHE UNTER EINER KURVE, WENN DIESE IN EXPLIZITER FORM GEGEBEN IST.

126PROGRAM STEPS
STEFAN TRCEK
D - PFORZHEIM

65081D 67-PARTIALBRUCHZERLEGUNG

DAS PROGRAMM ERMITTELT DIE PARTIALBRUCHZERLEGUNG EINER GEBROCHENRATIONALEN FUNKTION, WENN DIE ZAEHLERFUNKTION VOM MAX. GRAD 11, DIE NENNERFUNKTION VOM MAX GRAD 10

65081D (CONTD)

KEINE GLEICHEN ODER KOMPLEXEN NULLSTELLEN HAT UND ALLE NULLSTELLEN BEKANNT SIND.

217PROGRAM STEPS
STEFAN TRCEK
D - PFORZHEIM

65082D 67-POKER-TEST

DER POKER-TEST IST EINE SCHARFE PRUEFUNG FUER ZUFALLSZAHLENGENERATOREN. DIE ZUFALLSZIFFERN WERDEN IN 5-ER BLOECKE EINGETEILT, DIESE DANN IN 7 VERSCHIEDENE KLASSEN EINGEORDNET. MAN VERGLEICHT NUN DIE WAHRSCHEINLICHKEITEN DIESER KLASSEN MIT DER RELATIVEN HAUEUFIGKEIT IHRES AUFTRETENS.

100PROGRAM STEPS
STEFAN TRCEK
D - PFORZHEIM

65083D 67-MAXIMUM-TEST, ZAEHL-TEST

MIT DIESEN TESTS KANN MAN DIE QUALITAET VON ZUFALLSZAHLEN-GENERATOREN TESTEN. BEIM MAXIMUM-TEST WERDEN DREIERGRUPPEN VON ZUFALLSZAHLEN DARAUF UEBERPRUEFT, OB DIE MITTLERE ZIFFER GROESSER IST ALS JEDE DER ANDEREN. BEIM ZAEHLTEST WIRD DIE HAEUFIGKEIT DER EINZELNEN ZIFFERN (VON 0 BIS 9) GEZAEHLT.

108PROGRAM STEPS
STEFAN TRCEK
D - PFORZHEIM

65084D 67-NULLSTELLENBESTIMMUNG: NEWTON-RAPHSON-VERFAHREN

DIESES PROGRAMM BERECHNET DIE NULLSTELLEN EINER FUNKTION NACH DEM NEWTON-RAPHSON-VERFAHREN, WENN DIE FUKTION UND AUCH DEREN ABLEITUNG EXPLIZIT GEGEBEN SIND.

039PROGRAM STEPS
STEFAN TRCEK
D - PFORZHEIM

65085D 67-NULLSTELLEN: NEWTON-VERFAHREN HOEHERER ORDNUNG

DIESES PROGRAMM BERECHNET DIE NULLSTELLEN EINER FUNKTION NACH DEM NEWTON-VERFAHREN HOEHERER ORDNUNG, WENN DIE FUNKTION Y=F(X) UND DIE ERSTEN BEIDEN ABLEITUNGEN Y' UND Y'' EXPLIZIT GEGEBEN SIND. DIESES VERFAHREN HAT DEN VORTEIL, DASS ES IM GEGENSATZ ZUM NEWTON-RAPHSON-VERFAHREN AUCH BEI EINER MEHRFACHEN NULLSTELLE NOCH QUADRATISCH KONVERGIERT.

068PROGRAM STEPS
STEFAN TRCEK
D - PFORZHEIM

65086D 67-NULLSTELLENBESTIMMUNG: AITKEN-DELTA-PROZESS

NACH VORGABE EINES ANFANGSWERTES X0 BERECHNET DIESES PROGRAMM EINE REELLE NULLSTELLE EINER FUNKTION F(X)=0, WENN DIESE IN DER FORM X=G(X) GEGEBEN IST. VERFAHREN: DIE EIGENTLICHE ITERATION WIRD MIT DEM AITKEN-DELTA-PROZESS BESCHLEUNIGT. DAS VERFAHREN KONVERGIERT IM ALLGEMEINEN RECHT SCHNELL.

057PROGRAM STEPS
STEFAN TRCEK
D - PFORZHEIM

65087D 67-NULLSTELLENBESTIMMUNG: TANGENTIALPROZESS

DAS PROGRAMM BERECHNET DIE NULLSTELLEN EINER FUNKTION MIT DEM TANGENTIALPROZESS. DAZU MUSS DIE FUNKTION IN DER FORM X=G(X) GESCHRIEBEN WERDEN UND G'(X)

65087D (CONTD)

BEKANNT SEIN. DAS VERFAHREN KONVERGIERT QUADRATISCH BEI EINFACHEN NULLSTELLEN, ABER NUR NOCH LINEAR BEI MEHRFACHEN NULLSTELLEN.

044PROGRAM STEPS
STEFAN TRCEK
D - PFORZHEIM

65088D 67/97-FLAECHENBERECHNUNG

DAS PROGRAMM BERECHNET 8 VERSCHIEDENE FLAECHEN UND SUMMIERT SIE AUF. (WIRD FUER ABRECHNUNG VON NACH M**2 BEZAHLTEN ARBEITEN GEBRAUCHT)

170PROGRAM STEPS
D J FRITZ MAREK
A - MELK

65089D 97-STAHLBETONSTUETZE MIT MITTIGEM DRUCK KEINE KNICKGEFAHR

DAS PROGRAMM BERECHNET NACH EINGABE DER STUETZENABMESSUNGEN, MATERIALGUETEN, KNICKLAENGE UND BELASTUNG DEN BEWEHRUNGSPROZENTSATZ UND DEN ERFORDERLICHEN STAHLQUERSCHNITT NACH DIN 1045 BEI STUETZEN MIT MITTIGEM DRUCK UND SCHLANKHEITEN LAMBDA<=20 BEI GELENKIGER LAGERUNG SOWIE LAMBDA<=45 BEI VOLLEINSPANNUNG AN KOPF UND FUSS.

127PROGRAM STEPS
WOLFGANG STREUBER
D - KAISERSLAUTERN

65090D 97-STAHLBETONSTUETZE MIT EINACHSIGER AUSMITTE LAMBDA<=70 DIN 1045

DAS PROGRAMM BERECHNET NACH EINGABE DES STUETZENQUERSCHNITTES, DER MATERIALGUETEN, DER KNICKLAENGE UND DER BELASTUNG DEN BEWEHRUNGSPROZENTSATZ UND DEN ERFORDERLICHEN STAHLQUERSCHNITT.

432PROGRAM STEPS
WOLFGANG STREUBER
D - KAISERSLAUTERN

65091D 97-UNIVERSAL X-Y PLOTTER

MIT DIESEM PROGRAMM HAT DER BENUTZER DIE MOEGLICHKEIT EINE BELIEBIGE FUNKTION AUF DEM DRUCKER DES HP-97 DARZUSTELLEN. ES STEHEN 2 VERSCHIEDENE ANZEIGEFORMATE ZUR VERFUEGUNG: SEITE 1 (99 SCHRITTE) DER FUNKTIONS-WERT WIRD DURCH DIE LAGE DES DEZIMALPUNKTES DARGESTELLT, IN DER FORM: 888888.0000***. SEITE 2 (89 SCHRITTE) DER FUNKTIONSWERT WIRD DURCH DIE LAGE DER "8" DARGESTELLT. AUSDRUCK: 811111.***. DIE FUNKTION KANN ENTWEDER EXPLIZIT GEGEN (MAX 7 FUNKT.) ODER IN FORM VON FUNKTIONSWERTEN GEGEBEN SEIN.

188PROGRAM STEPS
CHRISTIAN FRANKE
D - VOERDE

65092D 97-PRUEFZIFFERNERMITTLUNG NACH DEM MODULO 11 VERFAHREN

ZAHLENREIHE VON 00.001 - 99.999 DIE DEZIMALSTELLEN DER GRUNDZAHLEN WERDEN MIT DEN GEWICHTSFAKTOREN MULTIPLIZIERT, DIE SUMME DURCH 11 DIVIDIERT, DER REST VOM MODUL 11 SUBTRAHIERT. DIE DIFFERENZ BILDET DIE PRUEFZIFFER. BEI REST 10 UND REST 11 BZW 0 IST DIE PRUEFZIFFER IMMER = 0. DIESES VERFAHRN GILT ALS DAS SICHERSTE EINSTELLIGE PRUEFVERFAHREN (99,71%).

109PROGRAM STEPS
JUERGEN RIEMANN
D - LANGENFELD

65093D 97-EW NSP NETZBERECHNUNG

PROGRAMM EIGNET SICH ZUR SPANNUNGS-ABFALLBERECHNUNG IN NIEDERSPANNUNGS

65093D (CONTD)

-STRAENGEN MIT BIS ZU 19 VERSCHIEDENEN LEITUNGSABSCHNITTEN.DER MAXIMAL ZULAESSIGE ENTNAHMESTROM AM ENDE EINES WAEHLBAREN LEITUNGSABSCHNITTES WIRD ALS GESCHAETZTER WERT EINGEGEBEN. RECHNER VERAENDERT DIESEN ENTNAHMESTROM ALSDANN, AUSGEHEND VOM SCHATZWERT SO LANGE, BIS DER AUFTRETENDE SPANNUNGSABFALL AM ENDE DER LEITUNG MIT EINER GENAUIGKEIT VON 0,1 VOLT MIT DEM EINGEGEBENEN MAXIMAL ZULAESSIGEN SPANNUNGS-ABFALL UEBEREINSTIMMT.

215PROGRAM STEPS
MAX WIGET
CH - WALLISELLEN

65094D 67-UMRECHNUNG SI-KONVENTIONELLE EINIGHEITEN CONVER.SI-USUAL STANDR.

DAS PROGRAMM BERECHNET SI-EINHEITEN UND UMGEKEHRT KONVENTIONELLE EINHEITEN (BLUTDRUCK, BULTZUCKER, HARNSTOFF, KREATININ, HARNSAEURE, CALCIUM, EISEN, TRIGLYCERIDE, CHOLESTERIN, BILIRUBIN)

134PROGRAM STEPS
TH BRUNZEMA
D - EMDEN

65095D 97-NUKLID-KARTE

DAS PROGRAMM SUCHT DIE ZERFALLSART DES GEGEBENEN NUKLIDS UND BESTIMMT SEIN ZERFALLSPRODUKT.

126PROGRAM STEPS
ROLAND DIETHER
CH - TURGI

65096D 67-ZAHLENAKROBATIK (MIT SHIKANEN)

HP STELLT EINE 5 STELLIGE ZUFALLSZAHL ABCDE HER, WELCHE NUR DIE ZIFFERN 4 BIS 9 ENTHAELT. DER SPIELER SOLL NUN EINE ABSTEIGENDE ZAHL DARAUS BILDEN (A>=B>=C>=D>=E).ER KANN A MIT C VERTAUSCHEN, B MIT C, C MIT D UND C MIT E.BEI JEDEM VERTAUSCHEN WERDEN 1 ODER 2 PUNKTE VON DEN TAUSCHENDEN ZAHLEN ABGEZOGEN ("SCHIKANE"). SPAETESTENS WENN ZUM ERSTEN MAL EINE "0" IN DER 5 STELLIGEN ZAHL VORKOMMT,MUSS DIE ZAHL ABSTEIGEND SEIN; ANDERENFALLS HAT DER SPIELER VERLOREN.

106PROGRAM STEPS
JOACHIM REINHARDT
D - COELBE-BUERGELN

65097D 67-ZAHLENAKROBATIK-TRICKREICH

HP STELLT EINE 9 STELLIGE ZUFALLSZAHL HER, WELCHE AUS DEN ZIFFERN 1 BIS 9 BESTEHT. DER SPIELER MUSS NUN VERSUCHEN DARAUS DIE SEQUENZ 123456789 ZU ERREICHEN. DIES KANN ER DURCH UNKEHREN BESTIMMTER TEILE DER ZUFALLSZAHL ODER AUCH DURCH ZYKLISCHES VERTAUSCHEN DER MITTLEREN DREI ZIFFERN DER 9 STELLIGEN ZAHL.
ES DAUERT SCHON EINE WEILE, BIS DER SPIELER ZUM "MEISTER" WIRD!

174PROGRAM STEPS
JOACHIM REINHARDT
D - COELBE-BUERGELN

65098D 67-ZALENAKROBATIK-PATIENCE

HP STELLT EINE 9 STELLIGE ZUFALLSZAHL HER, WELCHE AUS ALLEN ZIFFERN VON 1 BIS 9 BESTEHT: ABCDEFGHI. DURCH ZYKLISHES VERTAUSCHEN BESTIMMTER ZIFFERNABSCHNITTE MUSS DER SPIELER DIE REIHENFOLGE 123456789 HERSTELLEN. WENN DIE PATIENCE "AUFGEHT", D.H. WENN ES DEM SPIELER MOEGLICH IST, DIE REIHENFOLGE 123456789 ZU ERSTELLEN, DANN WIRD AUCH DIE ANZAHL DER VERTAUSCHUNGSOPERATIONEN ANGEZEIGT. GEHT DIE PATIENCE NICHT AUF, SO BEGINNT MAN EIN NEUES SPIEL.

65098D (CONTD)

110PROGRAM STEPS
JOACHIM REINHARDT
D - COELBE-BUERGELN

65099D 67-LINEARE VIERFACH-REGRESSEIONS-RECHNUNG

ES WERDEN FUER DIE FUNKTION
T=A+BX+CY+DZ+ES
T=A*X**B*Y**C*Z**D*S**E
DIE REGRESSIONSKOEFFIZIENTEN A,B,C, D,E UND DER MULTIPLE KORRELATIONS-KOEFFIZIENT R**2 ERRECHNET.

448PROGRAM STEPS
PETER WROBEL
D - FELLBACH

65100D 67-STATISTISCHE AUSWERTUNG DER LINEAREN VIERFACH-REGRESSION

NACH AUSFUEHRUNG DES PROGRAMMS "LINEARE VIERFACH-REGRESSIONSRECHNUNG" WIRD ERRECHNET:FREIHEITSGRADE STREUMASS, BESTIMMTHEITSMASS, RECHNERISCHER F-WERT, PARTIELLE KORRELATIONSMASSE, PROZENTUALER EINFLUSS DER REGRESSIONSKONSTANTEN A UND DER VARIABLEN AUF DIE ZIELGROESSE,RESTVARIANZ.

219PROGRAM STEPS
PETER WROBEL
D - FELLBACH

65101D 67-KURVENDISKUSSION DER FUNKTION Y=F(X) UND ABLEITUNGEN

DAS PROGRAMM ERRECHNET VON EINER BELIEBIGEN FUNKTION DER FORM Y=F(X) NULLSTELLEN, EXTREMWERTE, WENDEPUNKTE UND POLSTELLEN INNERHALB EINES INTERVALLS. AUSSERDEM FUNKTIONSWERTE, 1. ABLEITUNG, 2. ABLEITUNG UND 3. ABLEITUNG.

175PROGRAM STEPS
JONNY SPECKNER
D - ERLMUEHLE

65102D 67-OBER- UND KOMBINATIONSTOENE

DIE UEBERTRAGUNGSKENNLINIE SEI DURCH EINE POTENZREIHE BIS ZUR 16. ORDNUNG GEGEBEN. AUF DIESE KENNLINIE WERDEN EIN ODER ZWEI HARMONISCHE SCHWINGUNGEN MIT BELIEBIGEN AMPLITUDEN GEGEBEN. DAS PROGRAMM BERECHNET DANN DIE AMPLITUDEN ALLER OBERTOENE UND KOMBINATIONSTOENE DES AUSGANGSSIGNAL. PROGRAMM IST KOMPATIBEL ZU 52375.

223PROGRAM STEPS
HORST VOELZ
DX - BERLIN

65103D 67-KUGELAUS- UND -ABSCHNITTE

MIT DIESEM PROGRAMM KOENNEN VIELFAELTIGE VOLUMEN, MAERTEL UND OBERFLAECHEN VON KUGELAB- UND AUSCHNITTEN BERECHNET WERDEN.VON DEN GROESSEN, KUGELRADIUS ZWEI VERSCHIEDENE KREISABSCHNITTKREIS, BZW KEGELKALLOTTEN- UND KUGELABSCHNITTEN BZW BASISWINKEL, KOENNEN IN BELIEBIGER KOMBINATION, DIE MINIMALE ANZAHL EINGEGEBEN WERDEN.ES WERDEN BERECHNET, KEGEL, KALLOTTEN, ABSCHNITTE UND BELIEBIGE KOMBINATIONEN DER VOLUMEN UND OBERFLAECHEN.

223PROGRAM STEPS
HORST VOELZ
DX - BERLIN

65104D 67-KREISAUS- UND -ABSCHNITTE

ES KOENNEN VIELFAELTIGE AB- UND AUSSCHNITTE VON KREISEN BERECHNET WERDEN, UND ZWAR IHRE FLAECHE, BOEGEN UND UMFAENGE. AUSGEGANGEN WIRD VON DER MINIMAL NOTWENDIGEN ABMESSUNGEN IN BELIEBIGER KOMBINATION. DURCH SUBTRAKTION UND ADDITION VON

65104D (CONTD)

MEHREREN TEILEN WIRD DIE VIELFAELTIGKEIT WEITER ERHOEHT.

219PROGRAM STEPS
HORST VOELZ
DX - BERLIN

65105D 67-INTEGRATION NACH EULER UND MCLAURIN

DIESE INTEGRATION IST SEHR SCHNELL UND GENAU. SIE BENOETIGT DIE 1. UND EVTL. DIE 3. ABLEITUNG DER FUNKTION -PROGRAMM IST NOCH SCHNELLER UND KUERZER ALS 52312

107PROGRAM STEPS
HORST VOELZ
DX - BERLIN

65106D 67-INTEGRATION MIT FEHLERVORGABE

PROGRAMM GESTATTET INTEGRATION MIT FEHLERVORGABE. ES WERDEN INTEGRAL UND MAXIMALER FEHLER AUSGEGEBEN. ES KANN AUCH EINE SCHRITTZAHLVORGABE ERFOLGEN. AUCH DANN WERDEN INTEGRAL UND FEHLER AUSGEGEBEN. PROGRAMM AEHNELT 51726, IST JEDOCH ERHEBLICH SCHNELLER UND KUERZER, ENTHAELT MEHR SERVICE.

145PROGRAM STEPS
HORST VOELZ
DX - BERLIN

65107D 67-ALGEBRA LERNPROGRAMM

MIT DIESEM PROGRAMM KOENNEN KINDER DIE ALGEBRAISCHEN GRUNDREGELN UEBEN ZB:PUNKTRECHNUNG GEHT VOR STRICHRECHNUNG,DAS BEACHTEN DER KLAMMERN. DARUEBERHINAUS BIETET DAS PROGRAMM DIE MOEGLICHKEIT DEN UMGANG MIT UPN -RECHNERN ZU LERNEN,INDEM DER HP-67 SELBST ZUR LOESUNG DER EINGEGEBENEN GLEICHUNG BENUTZT WIRD.

216PROGRAM STEPS
MARTIN KAWALETZ
D - SALZGITTER

65108D 67-BRUCHRECHNUNG

BERECHNUNG VON ALGEBRAISCHEN, GEWOEHNLICHEN BRUECHEN. ERGEBNIS ANGEZEIGT AUCH ALS ALGEBRAISCHER BRUCH.

140PROGRAM STEPS
WERNER HINTZE
D - HAMBURG

65109D 67-PLANEN VON MIKROWELLEN - VERBINDUNGEN NACH LANDKARTEN

DAS PROGRAMM ERRECHNET AUFGRUND DER INFORMATIONEN AUS EINER LANDKARTE, OB EIN PUNKT C (HOEHE HC) AUF DER VERBINDUNGSLINIE AB
1) DIE SICHT VON A NACH B VERDECKT
2) EINE MIKROWELLENVERBINDUNG BEI DER WELLENLAENGE VERUNMOEGLICHT.

163PROGRAM STEPS
LEO SCHWERI
CH - SPREITENBACH

65110D 67-BIEGESTAEBE 1-4

DAS PROGRAMM ERMITTELT DEN BIEGEMOMENTENVERLAUF EINES BALKENS AUF ZWEI STUETZEN BEI BEANSPRUCHUNG AUF BIEGUNG UND AUF KNICKUNG.

212PROGRAM STEPS
DETLEF R SCHMITT
D - OTTOBRUNN

65111D 97-INVESTITIONSANALYSE BEI UNGLEICHEN CASH FLOWS

FUER EINE FOLGE VON MAX. 23 VORGEGEBENEN CASH FLOWS WERDEN WAHLWEISE BERECHNET:1)DIE DYNAMISCHE AMORTISATIONSDAUER (N) DES INVESTIERTEN

65111D (CONTD)

KAPITALS BEI BELIEBIG GEWAEHLTEM ZINSSATZ I;(2) DIE INTERNE VERZINSUNG (IRR) DER GEGEBENEN CASH-FLOW-FOLGE;(3) ABGEZINSTER BARWERT (NPV) BEI BELIEBIGEM ZINSSATZ I;(4) AUFGEZINSTER ENDWERT (FV) BEI BELIEBIGEM ZINSSATZ I. DOKUMENTATION ENTHAELT AUSFUEHRLICHE ERLAEUTERUNGEN MIT ZAHLREICHEN BEISPIELEN UND GRAPHISCHEN DARSTELLUNGEN.

224PROGRAM STEPS
HANS STOECKLMAIR
A - KLAGENFURT

65112D 97-MITTRAGENDE BREITE VON PLATTENBALKEN NACH HEFT 240 (D.A.F. STB)

DAS VORLIEGENDE PROGRAMM BERECHNET DIE MITTRAGENDE BREITE VON PLATTENBALKEN NACH DEN ANGABEN DES HEFTES 240 DES DEUTSCHEN AUSSCHUSSES ERSATZSTUETZWEITE LO WIRD DABEI VOM PROGRAMM JE NACH VORHANDENEM STAT. SYSTEM AUTOMATISCH BERUECKSICHTIGT, EBENSO DER FALL DER PLATTE IN DER DRUCKZONE (UNTEN LIEGEND) UEBER DEN STUETZEN VON DURCHLAUFTRAEGERN.

205PROGRAM STEPS
CLAUS M DACHSELT
D - WITTEN-ANNEN

65113D 97-QUERSCHNITT VON MEHRFACHBELASTETEN DREHSTROMLEITUNGEN

DAS PROGRAMM BERECHNET DEN QUERSCHNITT EINER DREHSTROMLEITUNG MIT MEHREREN ABZWEIGEN BEI GEGEBENEM LEISTUNGS- ODER SPANNUNGSVERLUST UNTER ANNAHME EINER DURCHGEHEND GLEICHEN LEITUNG.

113PROGRAM STEPS
WALTER KROPF
A - LEOBEN

65114D 97-LEISTUNGS- UND SPANNUNGSVERLUST MEHRFACHBELASTETER DREHSTROMLEITUNG

PROGRAMM BERECHNET DEN LEISTUNGS- & SPANNUNGSVERLUST VON DREHSTROMLEITUNGEN MIT MEHREREN ABZWEIGEN. DER LEISTUNGSVERLUST WIRD IN WATT & IN % DER STRECKENLEISTUNG BZW DER EINSPEISELEISTUNG BERECHNET. EINMAL EINGEGEBENE WERTE WERDEN GESPEICHERT & IMMER WIEDER VERWENDET. ES BRAUCHEN NUR WERTE, WELCHE SICH GEAENDERT HABEN,NEU EINGEGEBEN WERDEN -FUER DIE SPANNUNGSVERLUSTBERECHNUNG KANN ENTWEDER DER BLINDWIDERSTANDSBELAG X' EINGEGEBEN WERDEN...

209PROGRAM STEPS
WALTER KROPF
A - LEOBEN

65115D 97-LEISTUNGS- UND SPANNUNGSVERLUST VON DREHSTROMLEIUNGEN

MIT DEM PROGRAMM KOENNEN DIE GROESSEN: LAENGE, LEISTUNG, QUERSCHNITT, SPANNUNGSVERLUST UND LEISTUNGSVERLUST WECHSELWEISE BERECHNET WERDEN.

203PROGRAM STEPS
WALTER KROPF
A - LEOBEN

65116D 67-BERECHNUNG D. FLUGBAHN EINES KOERPERS

DAS PROGRAMM BERECHNET DIE FLUGBAHN EINES KOERPERS, DER MIT DER ANFANGS GESCHWINDIGKEIT V HOCHGESCHLEUDERT WIRD, IN ABHAENGIGKEIT VON DER ZEIT T.

062PROGRAM STEPS
MICHAEL TARNOWSKI
D - WIESBADEN

65117D 67-HOEHE UND AZIMUT EINES HIMMELSKOERPERS

DIESES PROGRAMM BERECHNET DIE HOEHE

65117D (CONTD)

UND DAS AZIMUT EINES HIMMELSKOERPERS ZU GEGEBENER GEOGRAPHISCHER BREITE DES BEOBACHTUNGSSTANDORTES UND ZU DEN LOKALEN WERTEN FUER STUNDENWINKEL UND DEKLINATION DES HIMMELSKOERPERS. DAMIT ERSETZT DIESES PROGRAMM EINE REIHE NAUTISCHER TAFELN (HO-TAFELN)

071PROGRAM STEPS
MICHAEL TARNOWSKI
D - WIESBADEN

65118D 67-KURVENDISKUSSION DER GAUSSCHEN FEHLERKURVE

DAS PROGRAMM BERECHNET HOCH- UND WENDEPUNKTE, FUNKTIONSWERTE UND DAS INTERVALL IN GEGEBENEN GRENZEN DER NORMALVERTEILUNGSKURVE. EBENFALLS WIRD DIE STEIGUNG DER TANGENTEN IM WENDEPUNKT BERECHNET.

092PROGRAM STEPS
MICHAEL TARNOWSKI
D - WIESBADEN

65119D 67-RAUMSCHIFF ORION

AUF PATROUILLENFLUG FAENGT RAUMSCHIFF ORION EINEN FUNKNOTRUF, VON EINEM UNBEKANNTEN PLANETEN NOTGELADETEN RAUMSCHIFF, AUF. SIE SETZT ZUR LANDUNG AUF DEN UNBEKANNTEN PLANETEN,IN UNBEKANNTEN TERRAIN AN. WENN SIE ZERSCHELLT, IST SOWOHL DIE ORION ALS AUCH DAS NOTGELANDETE RAUMSCHIFF VERLOREN.

093PROGRAM STEPS
MICHAEL TARNOWSKI
D - WIESBADEN

65120D 97-FARBCODE VON WIDERSTAENDEN

DIESES PROGRAMM ERMITTELT DIE WIDERSTANDSWERTE VON ELEKTRISCHEN WIDERSTAENDEN MIT 4 (SEITE 2) BZW 5 (SEITE 1+2) FARBRINGEN. DA DIE WERTE IM Z UND IM Y REGISTER ERHALTEN BLEIBEN, SIND AUCH BERECHNUNGEN VON KLEINEREN WIDERSTANDSNETWZERKEN MOEGLICH. NACHDEM DER TOLERANZRING EINGEGEBEN WURDE, ERMITTELT DAS PROGRAMM DEN KLEINST- UND GROESSTMOEGLICHEN WIDERSTANDSWERT. EIN PRINT-MODUS KANN WAHLWEISE EINGESTELLT WERDEN.

128PROGRAM STEPS
CHRISTIAN FRANKE
D - VOERDE

65121D 97-KOMBINATORIK

DIESES PROGRAMM BERECNET:
1-:KOMBINATIONEN MIT UND OHNE WIEDERHOLUNG
2-:VARIATIONEN MIT UND OHNE WIEDERHOLUNG
3-:PERMUTATIONEN.
DIE EINGABEWERTE DUERFEN AUCH GROESSER ALS 69 SEIN. DAS PROGRAMM BERECHNET DIE WERTE JEWEILS AUF DIE KUERZESTMOEGLICHE METHODE.

098PROGRAM STEPS
CHRISTIAN FRANKE
D - VOERDE

65122D 67-MAX. ZUL. HORIZONTALLASTEN FUER MASSIVPAEHLE (I)

PROGRAMM ERMITTELT DIE ZUL. HORIZONTALBELASTUNG AUF MASSIVPHAELE, MIT/OHNE AUSKRAGUNG UEBER DEN BODEN .DIE CHARAKTERISTISCH LAENGE DES IM BODEN EINGESPANNTE PHALTEILS MUSS GROESSER ALS 5 SEIN. DER PFAHLKOPF KANN FREI GELAGERT SEIN ODER EINGESPANNT. DAS TRAGLASTVERMOEGEN BERUECKSICHTIGT FOLGENDE BEDINGUNGEN: 1-DIE MAX. ZUL. ERDRUCK AM KOPF DER PFAHLEINSPANNUNG;2-DER ZUL. ANSTIEG DES ERDRUCKS AM KOPF DER PFAHLEINSPANNUNG IM BODEN;3-DIE MAX. ZUL. HORIZONTALVERSCHIEBUNG AM PFAHLKOPF

65122D (CONTD)

215PROGRAM STEPS
FRITZ O GOEDICKE
D - KAARST

65123D 67-POLYNOMDIVISION-VOLLSTAENDIGES HORNERSCHEMA (AUCH KOMPLEX)

DAS PROGRAMM ERRECHNET AUS DEN KOEFFIZIENTEN EINES RELLEN ODER KOMPLEXEN POLYNOMS P(Z) DAS EINFACHE UND VOLLSTAENDIGE HORNERSCHEMA. GRAD DES POLYNOMS REELL: N<=19; KOMPLEX N<=9.

208PROGRAM STEPS
JONNY SPECKNER
D - ERLMUEHLE

65124D 97-VERZUGSZINSEN

DAS PROGRAMM BERECHNET VERZUGSZINSEN FUER RECHNUNGEN, BEI DENEN DAS ZAHLUNGSZIEL UEBERSCHRITTEN WURDE. DIE ANZAHL DER UEBERSCHRITTENEN TAGE WERDEN VOM PROGRAMM BERECHNET, WOBEI PRO MONAT 30 TAGE GERECHNET WERDEN. IN DER ENDROUTINE WERDEN AUF DIE VERZUGSZINSEN 13% MEHRWERTSTEUER BERECHNET. DIE EINGABEN WERDEN DURCH EINGABE-NUMMERN VOM PROGRAMM IM DIALOG GEFORDERT.

162PROGRAM STEPS
KARL-LUDWIG BUTTE
D - FULDA

65125D 67-AUSWERTUNG VON UEBERTRAGUNGSFUNKTIONEN LINEARER NETZWERKE

DIESES PROGRAMM WERTET EINE KOMPLEX -WERTIGE GEBROCHEN RATIONALE FUNKTION IN P (P=IMAGINAERE EINHEIT* UNABHAENGIG VARIABEL) MIT REELLEN KOEFFIZIENTEN FUER FREI WAEHLBARE WERTE VON P AUS,OHNE DASS DIE KOEFFIZIENTEN JEDESMAL NEU EINGEGEBEN WERDEN MUESSEN.DER GRAD VON NENNER- WIE ZAEHLERPOLYNOM DARF 9 NICHT UEBERSCHREITEN. DARSTELLUNG DES RESULTATS WAHLWEISE IN REAL- UND IMAGINAERTEIL,POLARKOORDINATEN ODER BODE-FORM. ANWENDUNGEN:UEBERTRAGUNGS- UND IMPEDANZFUNKTIONEN LINEARER NETZWERKE, REGELKREISE USW

126PROGRAM STEPS
HUBERT KAESLIN
CH - ZURICH

70000D 67-FACTEUR DE CONCENTRATION DE CONTRAINTES PLAQUES EPAULEES

CE PROGRAMME CALCULE LE FACTEUR DE CONCENTRATION DE CONTRAINTES DANS UNE PLAQUE AVEC UN OU DEUX EPAULEMENTS INCLINES OU DROITS. LE PROGRAMME DETERMINE AUSSI LES TENSIONS NOMINALE ET MAXIMALE DANS LES CAS DE TRACTION, FLEXION OU COMBINAISON DES DEUX.

145PROGRAM STEPS
ALAIN CHAPPUIS
CH - LAUSANNE

70001D 67-FACTEUR DE CONCENTRATION DE CONTRAINTES ARBRE GORGE U1

CE PROGRAMME CALCULE LE FACTEUR DE CONCENTRATION DE CONTRAINTES, LA TENSION NOMINALE ET LA TENSION MAXIMALE D'UN ARBRE AVEC UNE GORGE A FOND SEMI-CIRCULAIRE SOUMIS A LA TRACTION, LA FLEXION, LA TORSION OU UNE COMBINAISON DE DEUX OU DES TROIS EFFORTS. LE PROGRAMME EST AUSSI UTILISABLE SI LES BORDS DE LA GORGE SONT INCLINES.

152PROGRAM STEPS
ALAIN CHAPPUIS
CH - LAUSANNE

70002D 67-FACTEUR DE CONCENTRATION DE CONTRAINTES ARBRES EPAULES

CE PROGRAMME CALCULE LE FACTEUR DE CONCENTRATION DE CONTRAINTES DANS UN ARBRE AVEC 1 OU 2 EPAULEMENTS INCLINES OU DROITS. LE PROGRAMME DETERMINE AUSSI LES TENSIONS NOMINALE ET MAXIMALE DANS LES CAS DE TRACTION, FLEXION, TORSION, OU COMBINAISON DE CES CHARGES.

165PROGRAM STEPS
ALAIN CHAPPUIS
CH - LAUSANNE

70003D 67-IMAGES, DERIVEES 1,2,3EMES, RACINES, MAX, MA, INFLEXION

ETUDE DE FONCTION:IMAGE, DERIVEES PREMIERES, DEUXIEME ET TROISIEME EN DES POINTS QUELCONQUES.RECHERCHE DES RACINES, DES POINTS D'EXTREMUM ET DES POINTS D'INFLEXION PAR APPROXIMAITON.

168PROGRAM STEPS
JACQUES MAREE
B - NAMUR

70004D 67-CERCLE DE MOHR

CE PROGRAMME DETERMINE LE CERCLE DE MOHR A PARTIR DE 3 CONTRAINTES RATTACHEES A UNE AXE DE REFERENCE. LE PROGRAMME DONNE LES PARAMETRES FONDAMENTAUX DU CERCLE FONDAMENTAL ET PERMET LE CALCUL DE L'ETAT DE CONTRAINTE POUR N'IMPORTE QUEL ANGLE.

111PROGRAM STEPS
JACQUES MASSON
CH - ST SULPICE

70005D 97-METHODE DE FERRARI

LA METHODE DE FERRARI EST DEVENUE LA PLUS RAPIDE ET LA PLUS COMPLETE POUR CALCULER NUMERIQUEMENT LES RACINES D'UNE EQUATION DU QUATRIEME DEGRE A UNE INCONNUE, MEME AVEC UN MINI-ORDINATEUR.

224PROGRAM STEPS
PASCAL VAUTIER
CH - GENEVE

70006D 67-NAVIGATION ASTRONOMIQUE: TABLES, DIVERSES (EPHEM. NAUT.; FRIOCOURT)

TABLES DE CORRECTION DES HAUTEURS SOLEIL/LUNE/PLANETES/ETOILES; LES COMPOSANTES PEUVENT ETRE OBTENUES SEPAREMENT (EPHEMERIDES NAUTIQUES:

70006D (CONTD)

TABLES 1 A 9; FRICOURT:TABLES 1,2,3 7,8,12,17,22,35 ET 36). REFRACTION: PRESSION EXPRIMABLE EN MM HG OU MB; ERREUR INFERIEURE A:0.01' POUR H>1.5* 0.07' POUR 0<H<1.5*

217PROGRAM STEPS
JEAN THIBERGE
F - CHERBOURG

70007D 67-PSYCHROMETRE/HUMIDITE RELATIVE

DONNEES LES TEMPERATURES DES THERMOMETRES A BULBES, L'UN SEC ET L'AUTRE HUMIDE, ET LA PRESSION BAROMETRIQUA, LE PROGRAMME CALCULE:
1-LA TENSION REELLE DE VAPEUR, EN MILLIBAR;
2-LA TENSION DE VAPEUR A LA SATURATION;
3-L'HUMIDITE RELATIVE EN POUR-CENT;
4-LE CONTENU EN GRAMMES D'EAU PAR 1 M3 D'AIR DANS L'ESSAI;
5-LE POINT DE ROSEE EN DEGRES CELSUIS

053PROGRAM STEPS
ARRIGO BOEHM
I - TORINO

70008D 67-RECTIFICATION BINAIRE PAR LA METHODE DE MC CABE-THIELE

LE PROGRAMME CALCULE LE NOMBRE D'ETAGES D'ENRICHISSEMENT ET EPUISEMENT D'UNE COLONNE DE RECTIFICATION BINAIRE DE VOLATILITE CONSTANTE, AVEC LES HYPOTHESES DE MC. CABE-THIELE L'ALIMENTATION PEUT ETRE LIQUIDE, VAPEUR OU UN MELANGE.

223PROGRAM STEPS
CLAUDI MANS
E - BARCELONA

70009D 67-POUTRE ISOSTATIQUE SERIE DE CHARGES CONCENTREES

POUTRE SUR 2 APPUIS SIMPLES SOUMIS A UNE SERIE DE CHARGES CONCENTREES EGALES. LE PROGRAMME CALCULE LES REACTIONS D'APPUIS,ROTATIONS,MOMENT MAXIMUM ET FLECHE MAXIMALE AINSI QUE LES MOMENTS D'ENCASTREMENT PARFAIT SELON CROSS.

221PROGRAM STEPS
ROGER LECLERCQ
F - PARIS

70010D 67-PILE OPERATIONNELLE DE 3 FRACTIONS

OPERATIONS SUR LES FRACTIONS AVEC UNE PILE OPERATIONNELLE DE 3 "REGISTRES".

207PROGRAM STEPS
PATRICH LANZ
CH - CRISSIER

70011D 97-LOTERIES

CE PROGRAMME PERMET DE JOUER A TOUTE LOTERIE COMPORTANT AU MAXIMUM 100 NOMBRES (DE 0 A 99/DE 1 A 100). L'UTILISATEUR ENTRE SIMPLEMENT LA "TAILLE" N DE LA LOTERIE ET LE NOMBRE M DE NUMEROS VOULUS, ET LA CALCULATRICE LUI FOURNIT ALORS UNE LISTE DE M NUMEROS COMPRIS ENTRE 0 ET N-1 (OU ENTRE 1 ET N, A CHOIX), CHAQUE NUMERO N'ETANT PAS REPETE DANS LA LISTE. PROGRAMME ASSEZ RAPIDE:POUR M=N=100, ENVIRON 8 MIN. (MOINS DE 5 SECONDES PAR NUMERO)

191PROGRAM STEPS
PASCAL FAIVRE
CH - DELEMONT

70012D 97-CALCULS DES HEURES DE TRAVAIL EN HORAIRE LIBRE

LE PROGRAMME CALCULE LE NOMBRE D'HEURES EXECUTEES EN HORAIRE LIBRE DE LA JOURNEE ET ENREGISTRE LES

70012D (CONTD)

RESULTATS SUR LA FACE 2; CALCULE L'HEURE DE SORTIE EN FONCTION DES HEURES FAITES AINSI QUE LE TOTAL DE LA SEMAINE.

112PROGRAM STEPS
JAUNIN DENIS
CH - GENEVE

70013D 67-ANALYSE DE COURBES DU TROISIEME DEGRE

CE PROGRAMME CALCULE LE POINT D'INFLEXION, LES POINTS D'INVERSION ET LES RACINES D'UNE FONCTION Y(X) DU TROISIEME DEGREE CONNUE.
IL CALCULE AUSSI Y'(X) EN TOUT POINT.

222PROGRAM STEPS
ALAIN BERGER
CH - BOUDRY

70014D 67-CALCULS PARAMETRES QUARTZ

SOLUTION INTERCHANGEABLE POUR LE CALCUL DE DIFFERENTS PARAMETRES DU QUARTZ.

091PROGRAM STEPS
ALAIN BERGER
CH - BOUDRY

70015D 67-SCHEMA EQUIVALENT D'UN QUARTZ

CE PROGRAMME CALCULE LES PARAMETRES EQUIVALENTS D'UN QUARTZ EN SERIE AVEC UNE CAPACITE CL.

085PROGRAM STEPS
ALAIN BERGER
CH - BOUDRY

70016D 67-MESURE DES PARAMETRES D'UN QUARTZ SUR PONT DE MESURE CEI

CE PROGRAMME CALCULE LES PARAMETRES DU CIRCUIT EQUIVALENT D'UN QUARTZ, CONNAISSANT CERTAINES DONNEES MESUREES SUR UN PONT EN II NORMALISE CEI.

156PROGRAM STEPS
ALAIN BERGER
CH - BOUDRY

70017D 67-DIMENSIONNEMENT DE LA SEMELLE D'UN MUR DE SOUTENEMENT B.A

CE PROGRAMME PERMET DE DIMENSIONNER AUTOMATIQUEMENT LA SEMELLE D'UN MUR DE SOUTENEMENT DONT ON A PREDETERMINE L'EPAISSEUR,L'EPAISSEUR DU MUR ETANT CONNUE ET UNIFORME DE HAUT EN BAS.
PARMI LES RESULTATS, ON TROUVE LE DEBORD AVANT DE LA SEMELLE PAR RAPPORT AU MUR,LE DEBORD ARRIERE, LES CONTRAINTES MAXI ET MINI OU LA CONTRAINTE MAXI 2 FOIS ET L'EXCENTRICITE DE LA CHARGE TOTALE RELATIVEMENT A L'AVANT DE LA SEMELLE.

224PROGRAM STEPS
NOEL BLANC
F - SAINT-ETIENNE

70018D 67-ASTROPHYSIQUE

CE PROGRAMME CALCULE LA GRAVITE, LE TEMPS DE REVOLUTION, LA VITESSE ORBITALE, LA VITESSE D'EVASION, LA VARIATION DE LA GRAVITE AVEC LA HAUTEUR OU LA PROFONDEUR.

128PROGRAM STEPS
MARC VAN BUGGENHOUT
B - ANDERLECHT

70019D 67-AGRANDISSEMENT SUR PAPIER CIBACHROME

PARTANT D'UN FORMAT, D'UNE DUREE D'EXPOSITION ET D'UN FILTRAGE INITIAUX DONNES, ET TENANT COMPTE DES CARACTERISTIQUES DU PAPIER

70019D (CONTD)

CIBACHROME, CE PROGRAMME CALCULE LA DUREE D'EXPOSITION ET LA MODIFICATION A APPORTER AUX VALEURS DE FILTRAGE EN FONCTION DU NOUVEAU FORMAT CHOISI. IL EST TENU COMPTE DE L'ECAT A LA LOI DE RECIPROCITE (SCHWARZSCHILD).

145PROGRAM STEPS
ERNEST CH GEHRET
CH - GLAND

70020D 67-ATOME DE BOHR - ENERGIE SPECTRE DE H + RAYON + VITESSE E

-CALCUL DE LA FORMULE DE BALMER LIANT LES RAIES DU SPECTRE D'H A LA LONGUEUR D'ONDE.
-CALCUL DU RAYON DES ORBITALES SUIVANT LE NOMBRE QUANTIQUE PRINCIPAL (N)
-CALCUL DE LA VITESSE DE L'E AUTOUR DU RAYON.
-CALCUL DE L'ENERGIE DE L'ELECTRON QUI PASSE D'UNE COUCHE A UNE AUTRE

084PROGRAM STEPS
UYTTEBROECK ALAIN
B - GILLY

70021D 67-FACTEURS PREMIERS ET NOMBRES PREMIERS

LE PROGRAMME 51640 D NE SEPARE PAS COMPLETEMENT CERTAINS NOMBRES ENTIERS EN FACTEURS PREMIERS.
EXAMPLE:POUR LE NOMBRE 112,357, LE PROGRAMME 51640 D DONNE:7-16,054, AU LIEU DE 7-7-2293.
LE NOUVEAU PROGRAMME PRESENTE DONNE LA TOTALITE DES FACTEURS PREMIERS DE N'IMPORTE QUEL NOMBRE ENTIER. EN AUTRE IL MET EN MEMOIRE LES RESULTATS, MEME AVEC UNE HP-67.

162PROGRAM STEPS
MATHIAN
F - ST DIDIER AU MONT D'OR

70022D 67-ECART RECIPROCITE FILMS COULEUR

CALCUL DE LA DUREE REELLE D'EXPOSITION,CONNAISSANT SA DUREE THEORIQUE (DETERMINEE AVEC UNE CELLULE PHOTOELECTRIQUE, PAR EXEMPLE),ET L'ECART A LA LOI DE RECIPROCITE PROPRE AU MATERIEL. LES PARAMETRES ONT ETE CALCULES A PARTIR DES COURBES ETABLIES D'APRES LES DONNEES DES FABRICANTS. LE PROGRAMME PERMET DE DETERMINER L'EXPOSITION REELLE CORRESPONDANT A 12 FILMS COULEURS INVERSIBLES ET NEGATIFS.
(KODAK, AGFA)

128PROGRAM STEPS
ERNEST CH GEHRET
CH - GLAND

70023D 67-FLIMS COULEUR.
-ECART DE RECIPROCITE

CONNAISSANT LE COEFFICIENT DE SCHWARZSCHILD, IL EST POSSIBLE DE CALCULER SOIT LA DUREE DE POSE CORRIGEE TC CONNAISSANT LA DUREE THEORIQUE TT,SOIT L'INVERSE:TT CONNAISSANT TC. LES DIFFERENTS PARAMETRES ONT ETE DETERMINES APRES ETABLISSEMENT DE LA COURBE (UNE DROITE, SUR COORDONNEES LOGARITHMIQUES) SUR LA BASE DES DONNEES FOURNIES PAR LA DOCUMENTATION TECHNIQUE EDITEE PAR LES FABRICANTS DE MATERIEL SENSIBLE

042PROGRAM STEPS
ERNEST CH GEHRET
CH - GLAND

70024D 97-EQUATION DE PELL: X2-AY**2=+-1**

CE PROGRAMME CALCULE LES SOLUTIONS ENTIERES DE X**2-AY**2=1, ET, LORSQU'ELLES EXISTENT, DE X**2-AY**2=-1 JUSQU'A LA PREMIERE VALEUR DE X SUPERIEURE A 10**9.

218PROGRAM STEPS

70024D (CONTD)

ANDRE JACCOMARD
F - LA TRINITE S/MER

70025D 97-MATRICES 3X3, PROGRAMME 1
-(PILE OPERATIONNELLE)

CE PROGRAMME, EN CREANT UNE PILE OPERATIONNELLE DE 2 MATRICES 3X3, PERMET D'ADDITIONNER, DE SOUSTRAIRE OU DE MULTIPLIER DES MATRICES, DE CALCULER L'INVERSE,LA TRANSPOSEE,LE DETERMINANT OU LE POLYNOME CARACTERISTIQUE D'UNE MATRICE,ET DE MULTIPLIER UNE MATRICE PAR UN NOMBRE OU PAR UNE MATRICE COLONNE. OPERATIONS EN CHAINE POSSIBLES. L'ENTREE DES DONNEES ET LA LECTURE DES RESULTATS S'EFFECTUENT EGALEMENT DE LA FACON LA PLUS COMMODE.

224PROGRAM STEPS
PASCAL FAIVRE
CH - DELEMONT

70026D 97-MATRICES 3X3, PROGRAMME 2
-(VERSION RAPIDE)

CE PROGRAMME EFFECTUE EXACTEMENT LES MEMES OPERATIONS QUE LE PROGR. STANDRAD SD-10A, MAIS LE TEMPS D'EXECUTION A ETE REDUIT AU MINIMUM GRACE A LA SUPPRESION DU STOCKAGE INDIRECT ET DE NOMBREUSES SOUS-ROUTINES. TEMPS D'EXECUTION DES FONCTIONS: LBL A,B,C ET D: 0,6 SEC. (SD-10A:1,4S.)/LBL E:8,6S.(13,3S.)/LBL A:1,8S. (3,8S)/LBL B:6,0S. (14,7S.)/LBL C:2,5S. (8,5S.). DE PLUS, UNE FONCTION "PAUSE" POUR LA LECTURE DES RESULTATS A ETE AJOUTEE

224PROGRAM STEPS
PASCAL FAIVRE
CH - DELEMONT

70027D 97-MATRICES 3X3, PROGRAMME 3
-(RANG ET POLYNOME)

CE PROGRAMME PERMET DE CALCULER LE RANG OU LE POLYNOME CARACTERISTIQUE DE TOUTE MATRICE 3X3. LES TEMPS DE CALCULS SONT MINIMAUX: POLYNOME CARACTERISTIQUE:3 SECONDES; RANG:AU MAXIMUM 5 SECONDES. TOUT EN ETANT TOTALEMENT INDEPENDANT,CE PROGRAMME PEUT ETRE UTILISE CONJOINTEMENT AVEC LES PROGRAMMES "MATRICES 3X3" 1 ET 2.

218PROGRAM STEPS
PASCAL FAIVRE
CH - DELEMONT

70028D 97-POLYNOME CARACTERISTIQUE D'UNE MATRICE 4X4, DETERMINANT

CE PROGRAMME PERMET DE CALCULER LE DETERMINANT OU LE POLYNOME CARACTERISTIQUE D'UNE MATRICE 4X4; CALCULS TRES RAPIDES: DETERMINANT: 7 SECONDES; POLYNOME CARACTERISTIQUE: 15 SECONDES. TOUT EN ETANT TOTALEMENT INDEPENDANT,CE PROGRAMME A ETE PREVU POUR ETRE UTILISE CONJOINTEMENT AVEC LE PROGRAMME 51442 D.

224PROGRAM STEPS
PASCAL FAIVRE
CH - DELEMONT

70029D 97-RANG ET DETERMINANT D'UNE MATRICE 4X4

CE PROGRAMME PERMET DE CALCULER LE RANG OU LE DETERMINANT DE TOUTE MATRICE 4X4. (LE RANG EST LA DIMENSION MAXIMALE D'UNE SOUS-MATRICE A DETERMINANT NON NUL). TOUT EN ETANT TOTALEMENT INDEPENDANT,CE PROGRAMME A ETE PREVU POUR ETRE UTILISE CONJOINTEMENT AVEC LE PROGRAMME 51442D

223PROGRAM STEPS
PASCAL FAIVRE
CH - DELEMONT

70030D 67-L'ATTAQUE NUCLEAIRE

70030D (CONTD)

CE JEU (PROPOSE PAR SCIENCE ET VIE DE JUILLET 79) PERMET DE DETRUIRE 5 SILOS NUCLEAIRES REPARTIS DANS UNE GRILLE DE 10X10: SOIT PAR DES TIRS AU BUT (A RAISON D'UNE MEGATONNE PAR TIR). SOIT PAR DES TIRS A RAYON DE DESTRUCTION PLUS ETENDU (NECESSITANT ALORS DES CHARGES UNITAIRES D'AUTANT PUS ELEVEES QUE LE RAYON DE DESTRUCTION EST PLUS GRAND). APRES CHAQUE TIR,L'ECRAN EN AFFICHE LE RESULTAT, ET DONNE DES INFORMATIONS DETAILLEES PERMETTANT DE NETTOYER COMPLETEMENT, AUX MOINDRES FRAIS, LE TERRITOIRE ENNEMI.

224PROGRAM STEPS
WILQUIN DENYS
F - NICE

70031D 67-TIC-TAC-TOE

CE PROGRAMME ANNULE OU GAGNE, QUE LA MACHINE JOUE LA PREMIERE OU NON.

218PROGRAM STEPS
GOULOIS DAVID
F - PARIGNARGUES

70032D 67-CASINO 9 OU LA ROULETTE AUX MULTIPLES CHANCES

CE PROGRAMME PRESENTE CERTAINES ARALOGIES AVEC CELUI NR 51120 D "FISHING COMPETITION",(QUI POURRAIT ETRE SENSIBLEMENT AMELIORE).IL PERMET EVENTUELLEMENT A 4 PERSONNES DE JOUER CONTRE LA CALCULATRICE,QUI SE SUBSTITUE AU CASINO ET COMPTABILISE LES GAINS (OU LES PERTES) DE CHACUN (TOUT EN OFFRANT LA POSSIBILITE DE OBTENIR,A TOUT MOMENT,DE MULTIPLES RENSEIGNEMENTS COMPLEMENTAIRES).IL EST PRATIQUEMENT IMPOSSIBLE DE SE LIVRER A DES ERREURS DE MANIPULATION RENDANT LE JEU CADUC - LIBERTE MAXIMUM DE TACTIQUE EST LAISSEE

224PROGRAM STEPS
WILQUIN DENYS
F - NICE

70033D 67-ECLAIR ELECTRONIQUE
ASA / DIN. NOMBRE-GUIDE

1) CONNAISSANT LES NG, L'ANGLE D'ECLAIRAGE ET LA DISTANCE TORCHE-SUJET,ON CALCULE LE NG RESULTANT DE CHAQUE TORCHE ET L'OUVERTUR NR A DONNER A L'OBJECTIF POUR LA PRISE DE VUES.VALABLE POUR 1 A 4 TORCHES.
2) CONVERSION ASA/DIN
3) CONNAISSANT LE NG CARACTERISTIQUE (N100) DE LA TORCHE, ON PEUT CALCULER N1, N6 CORRESPONDANT A UNE SENSIBILITE DE FILM S1 DONNEE, OU VICE-VERSA.
(SI NECESSAIRE POUR AVOIR UN N1 DONNE)

166PROGRAM STEPS
ERNEST CH GEHRET
CH - GLAND

70034D 67-ECLAIR ELECTRONIQUE
NOMBRE-GUIDE. ASA / DIN

TROIS PROGRAMMES DISTINCTS:
1) CONNAISSANT LE NOMBRE-GUIDE DE LA TORCHE, L'ANGLE D'ECLAIRAGE ET LA DISTANCE LAMPE-SUJET, PERMET DE CALCULER L'OUVERTURE RESULTANTE, EN EMPLOYANT JUSQU'A 4 TORCHES SIMULTANEMENT
2) CONVERSION INDICES DE SENSIBILITE ASA/DIN
3) CALCUL DU NOMBRE-GUIDE (NG) CORRESPONDANT A UNE SENSIBILITE S1 ASA, CONNAISSANT LE NG CARACTERISTIQUE DE LA TORCHE (100 ASA)

168PROGRAM STEPS
ERNEST CH GEHRET
CH - GLAND

70035D 67-DUEL AERIEN

PROGRAM ABSTRACTS

70035D (CONTD)

DEUX JOUEURS PILOTENT CHACUN LEUR AVION APRES L'AVOIR FAIT DECOLLER DE LEUR BASE. LEURS POSITIONS SONT REPEREES SUR UNE GRILLE 50X50. QUAND ILS SONT A PORTEE DE MISSILES ILS PEUVENT TIRER, ET, S'ILS ONT BIEN VISE, ILS PEUVENT DETRUIRE LEUR ADVERSAIRE. MAIS LE CARBURANT S'EPUISE. EN AURA-T-IL ASSEZ POUR ATTERRIR A LA BASE,REFAIRE UN PLEIN ET DECOLLER OU BIEN L'AVION S'ECRASERA-T-IL ...?

224PROGRAM STEPS
PAUL SEBAH
F - MARSEILLE

70036D 97-MULTIPLICATION DE MATRICES D'ORDRE 3 ET 4

-LE COTE 1 DE LA CARTE PERMET DE MULTIPLIER UNE MATRICE A 3X3 PAR UNE MATRICE B 3XN (N ILLIMITE).
-LE COTE 2 DE LA CARTE PERMET DE MULTIPLIER UNE MATRICE A 4X4 PAR UNE MATRICE B 4XN (N ILLIMITE).
LA MATRICE A EST SAUVEE EN MEMOIRE.

188PROGRAM STEPS
PASCAL FAIVRE
CH - DELEMONT

70037D 97-MULITPLICATION DE MATRICES D'ORDRE 5

CE PROGRAMME PERMET DE MULTIPLIER UNE MATRICE A 5X5 PAR UNE MATRICE B 5XN (N ILLIMITE). LES ELEMENTS DE CHAQUE MATRICE SONT ENTRES UNE SEULE FOIS AU CLAVIER, AUCUNE CARTE DE DONNEES N'EST NECESSAIRE ET LA MATRICE A EST SAUVEE EN MEMOIRE.

216PROGRAM STEPS
PASCAL FAIVRE
CH - DELEMONT

70038D 97-MULTIPLICATION DE MATRICES D'ORDRE 6

CE PROGRAMME PERMET DE MULTIPLIER UNE MATRICE A 6X6 PAR UNE MATRICE B 6XN (N ILLIMITE). LES ELEMENTS DE CHAQUE MATRICE SONT ENTRES UNE SEULE FOIS AU CLAVIER, AUCUNE CARTE DE DONNEES N'EST NECESSAIRE ET LA MATRICE A EST SAUVEE EN MEMOIRE.

157PROGRAM STEPS
PASCAL FAIVRE
CH - DELEMONT

70039D 67-COMBAT NAVAL (1 A 20 DIMENSIONS)

BUT DU JEU:
COULER UN BATEAU EN NE CONNAISSANT QUE LA DISTANCE DE SON TIR AU BATEAU (SI LA DIMENSION EST 1, ON NE SAIT QUE SI LE TIR EST TROP LONG OU TROP COURT)

177PROGRAM STEPS
PATRICK LANZ
CH - CRISSIER

70040D 67-PILE OPERATIONELLE DE 3 NOMBRES COMPLEXES I

PERMETS D'EFFECTUER LES OPERATIONS SUIVANTES, SUR UNE PILE DE TROIS REGISTRES:
ENTER, +, -, X, /, X ECHANGE Y, R ROLL-DOWN, R ROLL-UP, STO, RCL, STK, LAST X, MOYENNE, (CONJUGUE), IXI (NORME). EST ENTIEREMENT COMPATIBLE AVEC LES AUTRES CARTES DE LA SERIE (UN CALCUL COMMENCE AVEC UNE CARTE PEUT UTILISER LES AUTRES CARTES SIMPLEMENT EN LES PASSANTS QUAND C'EST NECESSAIRE).

224PROGRAM STEPS
PATRICK LANZ
CH - CRISSIER

70041D 67-PILE OPERATIONELLE DE 3 NOMBRES COMPLEXES II

70041D (CONTD)

PERMETS D'EFFECTUER LES OPERATIONS SUIVANTES, SUR UNE PILE DE TROIS REGISTRES:
ENTER, +, -, X, /, X ECHANGE Y, X**N, RACINE NIEME, (TOUTES LES SOLUTIONS), IN X, E**N, STK,LAST X, MOYENNE (CONJUGUE), IXI (NORME) EST ENTIEREMENT COMPATIBLE AVEC LES AUTRES CARTES DE LA SERIE (UN CALCUL COMMENCE AVEC UNE CARTE PEUT UTILISER LES AUTRES CARTES SIMPLEMENT EN LES PASSANTS QUAND C'EST NECESSAIRE).

224PROGRAM STEPS
PATRICK LANZ
CH - CRISSIER

70042D 67-CADRANS SOLAIRES SUR UN PLAN HORIZONTAL ET UN PLAN VERTICAL

CE PROGRAMME PERMET DE DESSINER, POUR UN LIEU DE LATITUDE CONNUE, DEUX TYPES DE CADRAN SOLAIRE (SUR UN PLAN HORIZONTAL OU UN PLAN VERTICAL EST-OUEST). IL CALCULE LES COORDONNEES DU POINT D'OMBRE A UN JOUR ET A UNE HEURE DETERMINE; IL CALCULE AUSSI LES RAYONS HORAIRES SUR LESQUELS SE TROUVENT TOUS LES POINTS D'OMBRE CORRESPONDANT A LA MEME HEURE. CALCUL SIMPLIFIE MAIS APPROXIMATION SATISFAISANTE.

224PROGRAM STEPS
JEAN MATHIAN
F - ST DIDIER AU MONT D'OR

70043D 67-DUREE DU JOUR ET AUTRES CARACTERISTIQUES SOLAIRES

POUR UN LIEU DETERMINE,CE PROGRAMME CALCULE, AVEC UNE ASSEZ BONNE PRECISION, TOUTES LES CARACTERISTIQUES SOLAIRES DEPENDANT DE LA LATITUDE: DUREE DU JOUR, HEURE ET AZIMUT DU LEVER DU SOLEIL, ETC... IL CALCULE EGALEMENT LA DATE DE CERTAINS PHENOMENES PARTICULIERS A LA ZONE DES TROPIQUES ET A LA ZONE POLAIRE: PASSAGE DU SOLEIL A LA VERTICALE, JOUR ET NUIT POLAIRES.

223PROGRAM STEPS
JEAN MATHIAN
F - ST DIDIER AU MONT D'OR

70044D 97-DERIVEE (POLYNOME DE DEGRE 2)

CE PROGRAMME CALCULE LA DERIVEE D'UNE FONCTION EN UN POINT EN APPROXIMANT LA DITE FONCTION PAR UN POLYNOME DE DEGRE 2 DANS LE VOISINAGE DU POINT CONSIDERE, PUIS EN DERIVANT LE POLYNOME AINSI CONSTRUIT. ASSEZ BONNE PRECISION ET RESULTAT EXACT POUR TOUT POLYNOME DE DEGRE EGAL OU INFERIEUR A 2. TEMPS DE CALCUL GENERALEMENT INFERIEUR A 3 SECONDES.

032PROGRAM STEPS
PASCAL FAIVRE
CH - DELEMONT

70045D 97-DERIVEE (POLYNOME DE DEGRE 4)

CE PROGRAMME CALCULE LA DERIVEE D'UNE FONCTION EN UN POINT EN APPROXIMANT LA DITE FONCTION PAR UN POLYNOME DE DEGRE 4 DANS LE VOISINAGE DU POINT CONSIDERE, PUIS EN DERIVANT LE POLYNOME AINSI CONSTRUIT. BONNE PRECISION ET RESULTAT EXACT POUR TOUT POLYNOME DE DEGRE EGAL OU INFERIEUR A 4. TEMPS DE CALCUL GENERALEMENT INFERIEUR A 6 SECONDES.

046PROGRAM STEPS
PASCAL FAIVRE
CH - DELEMONT

70046D 97-DERIVEE (POLYNOME DE DEGRE 6)

CE PROGRAMME CALCULE LA DERIVEE D'UNE FONCTION EN UN POINT EN

70046D (CONTD)

APPROXIMANT LA DITE FONCTION PAR UN POLYNOME DE DEGRE 6 DANS LE VOISINAGE DU POINT CONSIDERE, PUIS EN DERIVANT LE POLYNOME AINSI CONSTRUIT. TRES BONNE PRECISION ET RESULTAT EXACT POUR TOUT POLYNOME DE DEGRE EGAL OU INFERIEUR A 6. TEMPS DE CALCUL GENERALEMENT INFERIEUR A 8 SECONDES.

056PROGRAM STEPS
PASCAL FAIVRE
CH - DELEMONT

70047D 97-DERIVEE (POLYNOME DE DEGRE 8)

CE PROGRAMME CALCULE LA DERIVEE D'UNE FONCTION EN UN POINT EN APPROXIMANT LA DITE FONCTION PAR UN POLYNOME DE DEGRE 8 DANS LE VOISINAGE DU POINT CONSIDERE, PUIS EN DERIVANT LE POLYNOME AINSI CONSTRUIT. EXCELLENTE PRECISION ET RESULTAT EXACT POUR TOUT POLYNOME DE DEGRE EGAL OU INFERIEUR A 8. TEMPS DE CALCUL GENERALEMENT INFERIEUR A 10 SECONDES.

065PROGRAM STEPS
PASCAL FAIVRE
CH - DELEMONT

70048D 97-DERIVEE SECONDE (POLYNOME DE DEGRE 2)

CE PROGRAMME CALCULE LA DERIVEE SECONDE D'UNE FONCTION EN UN POINT EN APPROXIMANT LA DITE FONCTION PAR UN POLYNOME DE DEGRE 2 DANS LE VOISINAGE DU POINT CONSIDERE, PUIS EN DERIVANT DEUX FOIS LE POLYNOME AINSI CONSTRUIT.RESULTAT EXACT POUR TOUT POLYNOME DE DEGRE EGAL OU INFERIEUR A 3.TEMPS DE CALCUL GENERALEMENT INFERIEUR A 3 SECONDES.

033PROGRAM STEPS
PASCAL FAIVRE
CH - DELEMONT

70049D 97-DERIVEE SECONDE (POLYNOME DE DEGRE 4)

CE PROGRAMME CALCULE LA DERIVEE SECONDE D'UNE FONCTION EN UN POINT EN APPROXIMANT LA DITE FONCTION PAR UN POLYNOME DE DEGRE 4, PUIS EN DERIVANT DEUX FOIS LE POLYNOME AINSI CONSTRUIT.RESULTAT EXACT POUR TOUT POLYNOME DE DEGRE EGAL OU INFERIEUR A 5.TEMPS DE CALCUL GENERALEMENT INFERIEUR A 6 SECONDES.

053PROGRAM STEPS
PASCAL FAIVRE
CH - DELEMONT

70050D 97-DERIVEE SECONDE (POLYNOME DE DEGRE 6)

CE PROGRAMME CALCULE LA DERIVEE SECONDE D'UNE FONCTION EN APPROXIMANT LA DITE FONCTION PAR UN POLYNOME DE DEGRE 6 DANS LE VOISINAGE DU POINT CONSIDERE,PUIS EN DERIVANT LE POLYNOME AINSI CONSTRUIT DEUX FOIS. BONNE PRECISION ET RESULTAT EXACT POUR TOUT POLYNOME DE DEGRE EGAL OU INFERIEUR A 7. TEMPS DE CALCUL GENERALEMENT INFERIEUR A 8 SECONDES.

064PROGRAM STEPS
PASCAL FAIVRE
CH - DELEMONT

70051D 97-DERIVEE SECONDE (POLYNOME DE DEGRE 8)

CE PROGRAMME CALCULE LA DERIVEE SECONDE D'UNE FONCTION EN UN POINT EN APPROXIMANT LA DITE FONCTION PAR UN POLYNOME DE DEGRE 8. DANS LE VOISINAGE DU POINT CONSIDERE, PUIS EN DERIVANT DEUX FOIS LE POLYNOME AINSI CONSTRUIT. TRES BONNE PRECISION ET RESULTAT EXACT POUR TOUT POLYNOME DE DEGRE EGAL OU INFERIEUR

70051D (CONTD)

A 9. TEMPS DE CALCUL GENERALEMENT INFERIEUR A 11 SECONDES.

078PROGRAM STEPS
PASCAL FAIVRE
CH - DELEMONT

70052D 97-DERIVEE TROISIEME (POLYNOME DE DEGRE 8)

CE PROGRAMME CALCULE LA TROISIEME DERIVEE D'UNE FONCTION EN UN POINT EN APPROXIMANT LA DITE FONCTION PAR UN POLYNOME DU HUITIEME DEGRE, PUIS EN DERIVANT LE POLYNOME AINSI CONSTRUIT TROIS FOIS. TRES BONNE PRECISION (GENERALEMENT 6 CHIFFRES SIGNIFICATIFS JUSTES) ET RESULTAT EXACT POUR TOUT POLYNOME DE DEGRE EGAL OU INFERIEUR A 8. TEMPS DE CALCUL GENERALEMENT INFERIEUR A 10 SECONDES.

070PROGRAM STEPS
PASCAL FAIVRE
CH - DELEMONT

70053D 97-PILE OPERATIONNELLE DE VECTEURS

CE PROGRAMME CREE UNE PILE OPERATIONNELLE DE 3 VECTEURS DE DIMENSION 3 SE COMPORTANT EXACTEMENT DE LA MEME FACON QUE LA PILE HABITUELLE DE VOTRE CALCULATRICE.OPERATIONS POSSIBLES:1)ENTER 2)+ 3)-4)PRODUIT VECTORIEL 5)MULTIPLICATION D'UN VECTEUR PAR UN NOMBRE 6)X ET Y PERMUTES 7)PRODUIT SCALAIRE 8)NORME D'UN VECTEUR 9)STO 10)RCL 11) STACK ET 12)ANGLE ENTRE DEUX VECTEURS.

224PROGRAM STEPS
PASCAL FAIVRE
CH - DELEMONT

70054D 97-FACTORISATION RAPIDE

CE PROGRAMME DECOMPOSE UN ENTIER EN PRODUIT DE NOMBRES PREMIERS MUNIS DE LEURS EXPOSANTS RESPECTIFS. TOUT A ETE FAIT DANS LE BUT DE REDUIRE AU MAXIMUM LE TEMPS D'EXECUTION DE CE PROGRAMME, DE TELLE SORTE QU'IL EST CERTAINEMENT IMPOSSIBLE DE CONCEVOIR UN PROGRAMME SIMILAIRE PLUS RAPIDE. A TITRE D'EXAMPLE, LA DECOMPOSITION DE 894983 EST ACHEVEE EN MOINS DE DEUX MINUTES.
QUI DIT MIEUX?

198PROGRAM STEPS
PASCAL FAIVRE
CH - DELEMONT

70055D 97-TORSION ET DERIVEES

CE PROGRAMME PERMET DE CALCULER AVEC UNE GRANDE PRECISION LA TORSION DE TOUTE COURBE DONNEE PAR SES 3 EQUATIONS PARAMETRIQUES X(+),Y(+) ET Z(+). LES DERIVEES, DERIVEES SECONDES ET DERIVEES TROISIEMES DE CES 3 FONCTIONS SONT AUSSI CALCULEES AVEC UNE BONNE PRECISION ET ACCESSIBLES A L'UTILISATEUR.

159PROGRAM STEPS
PASCAL FAIVRE
CH - DELEMONT

70056D 97-MASTER MIND (VERSION RAPIDE)

VOUS POUVEZ JOUER AU MASTER MIND AVEC VOTRE HP GRACE A CE PROGRAMME, ET ESSAYER DE DECOUVRIR LE CODE SECRET DE 4 CHIFFRES ENTRE 1 ET 9 QU'ELLE A GENERE ELLE-MEME OU QU' UNE PERSONNE LUI A DONNE A VOTRE INSU.PRINCIPALE PARTICULARITE DE CE PROGRAMME: LE TEMPS DE REPONSE DE VOTRE HP LORS DE CHAQUE ESSAI A ETE MOINS DE 1 SECONDES.

224PROGRAM STEPS
PASCAL FAIVRE
CH - DELEMONT

70057D 97-CALCUL DES COORDONNEES DU RAYON D'ANGLE SUR FORME TV

LE PROGRAMME CALCUL LES COORDONNEES DU RAYON D'ANGLE DANS LES DEUX FORMES "TELEVISION",ET LA DIAGONALE (VOIR DESSINS), OU UN RAYON D'ANGLE EN FONCTION D'UNE DIAGONALE IMPOSEE DANS CE CAS UNE ESTIMATION DU RAYON DE DEPART EST DEMANDEE. FORMES FREQUENTES EN HORLOGERIE.

220PROGRAM STEPS
JAUNIN DENIS
CH - GENEVE

70058D 97-SYMBOLE DE JACOBI-LEGENDRE

CE PROGRAMME CALCULE LE SYMBOLE DE JACOBI-LEGENDRE (A/B), A EST UN ENTIER QUELCONQUE, B UN ENTIER POSITIF IMPAIR. LA SEULE LIMITATION AU PROGRAMME EST QUE LES ENTIERS N'AIENT PAS PLUS DE DIX CHIFFRES.

135PROGRAM STEPS
JEAN LAGRANGE
F - REIMS

70059D 97-DERIVEE (POLYNOME DE DEGRE 10)

CE PROGRAMME CALCULE LA DERIVEE D'UNE FONCTION EN UN POINT EN APPROXIMANT LA DITE FONCTION PAR UN POLYNOME DE DEGRE 10 DANS LE VOISINAGE DU POINT CONSIDERE, PUIS EN DERIVANT LE POLYNOME AINSI CONSTRUIT. PRECISION: GENERALEMENT 9 CHIFFRES SIGNIFICATIFS EXACTS. RESULTAT ABSOLUMENT EXACT POUR TOUT POLYNOME DE DEGRE EGAL OU INFERIEUR A 10. TEMPS DE CALCUL GENERALEMENT INFERIEUR A 13 SECONDES.

079PROGRAM STEPS
PASCAL FAIVRE
CH - DELEMONT

70060D 97-DERIVEE SECONDE (POLYNOME DE DEGRE 10)

CE PROGRAMME CALCULE LA DERIVEE SECONDE D'UNE FONCTION EN UN POINT EN APPROXIMANT LA DITE FONCTION PAR UN POLYNOME DE DEGRE 10 DANS LE VOISINAGE DU POINT CONSIDERE, PUIS EN CALCULANT LA DERIVEE SECONDE DE CE POLYNOME. PRECISION:GENERALEMENT 8 CHIFFRES SIGNIFICATIFS EXACTS. RESULTAT ABSOLUMENT EXACT POUR TOUT POYNOME DE DEGRE EGAL OU INFERIEUR A 11. TEMPS DE CALCUL GENERALEMENT INFERIEUR A 13 SECONDES.

089PROGRAM STEPS
PASCAL FAIVRE
CH - DELEMONT

70061D 97-DERIVEE TROISIEME (POLYNOME DE DEGRE 4)

CE PROGRAMME CALCULE LA DERIVEE TROISIEME D'UNE FONCTION EN UN POINT EN APPROXIMANT LA DITE FONCTION PAR UN POLYNOME DE DEGRE 4 DANS LE VOISINAGE DU POINT CONSIDERE, PUIS EN DERIVANT LE POLYNOME AINSI CONSTRUIT 3 FOIS. RESULTAT EXACT POUR TOUT POLYNOME DE DEGRE EGAL OU INFERIEUR A 4. TEMPS DE CALCUL GENERALEMENT INFERIEUR A 6 SECONDES.

045PROGRAM STEPS
PASCAL FAIVRE
CH - DELEMONT

70062D 97-DERIVEE TROISIEME (POLYNOME DE DEGRE 6)

CE PROGRAMME CALCULE LA DERIVEE TROISIEME D'UNE FONCTION EN UN POINT EN APPROXIMANT LA DITE FONCTION PAR UN POLYNOME DE DEGRE 6 DANS LE VOISINAGE DU POINT CONSIDERE, PUIS EN DERIVANT LE POLYNOME AINSI CONSTRUIT 3 FOIS. BONNE PRECISION ET RESULTAT EXACT POUR

70062D (CONTD)

TOUT POLYNOME DE DEGRE EGAL OU INFERIEUR A 6. TEMPS DE CALCUL GENERALEMENT INFERIEUR A 8 SECONDES

055PROGRAM STEPS
PASCAL FAIVRE
CH - DELEMONT

70063D 97-DERIVEE TROISIEME (POLYNOME DE DEGRE 10)

CE PROGRAMME CALCULE LA DERIVEE TROISIEME D'UNE FONCTION EN UN POINT EN APPROXIMANT LA DITE FONCTION PAR UN POLYNOME DE DEGRE 10 DANS LE VOISINAGE DU POINT CONSIDERE, PUIS EN CALCULANT LA DERIVEE TROISIEME DE CE POLYNOME. PRECISION: GENERALEMENT 7 CHIFFRES SIGNIFICATIFS EXACTS. RESULTAT ABSOLUMENT EXACT POUR TOUT POLYNOME DE DEGRE EGAL OU INFERIEUR A 10. TEMPS DE CALCUL GENERALEMENT INFERIEUR A 13 SECONDES.

092PROGRAM STEPS
PASCAL FAIVRE
CH - DELEMONT

70064D 97-DERIVEE QUATRIEME (POLYNOME DE DEGRE 6)

CE PROGRAMME CALCULE LA DERIVEE QUATRIEME D'UNE FONCTION EN UN POINT EN APPROXIMANT LA DITE FONCTION PAR UN POLYNOME DE DEGRE 6 DANS LE VOISINAGE DU POINT CONSIDERE, PUIS EN CALCULANT LA DERIVEE QUATRIEME DE CE POLYNOME. PRECISION ASSEZ BONNE, RESULTAT EXACT POUR TOUT POLYNOME DE DEGRE EGAL OU INFERIEUR A 7. TEMPS DE CALCUL GENERALEMENT INFERIEUR A 8 SECONDES.

059PROGRAM STEPS
PASCAL FAIVRE
CH - DELEMONT

70065D 97-DERIVEE QUATRIEME (POLYNOME DE DEGRE 8)

CE PROGRAMME CALCULE LA DERIVEE QUATRIEME D'UNE FONCTION EN UN POINT EN APPROXIMANT LA DITE FONCTION PAR UN POLYNOME DE DEGRE 8 DANS LE VOISINAGE DU POINT CONSIDERE, PUIS EN CALCULANT LA DERIVEE QUATRIEME DE CE POLYNOME. PRECISION: GENERALEMENT 5 CHIFFRES SIGNIFICATIFS EXACTS. RESULTAT ABSOLUMENT EXACT POUR TOUT POLYNOME DE DEGRE EGAL OU INFERIEUR A 9. TEMPS DE CALCUL GENERALEMENT INFERIEUR A 11 SECONDES.

077PROGRAM STEPS
PASCAL FAIVRE
CH - DELEMONT

70066D 97-DERIVEE QUATRIEME (POLYNOME DE DEGRE 10)

CE PROGRAMME CALCULE LA DERIVEE QUATRIEME D'UNE FONCTION EN UN POINT EN APPROXIMANT LA DITE FONCTION PAR UN POLYNOME DE DEGRE 10 DANS LE VOISINAGE DU POINT CONSIDERE, PUIS EN CALCULANT LA DERIVEE QUATRIEME DE CE POLYNOME. PRECISION: GENERALEMENT 5 CHIFFRES SIGNIFICATIFS EXACTS. RESULTAT ABSOLUMENT EXACT POUR TOUT POLYNOME DE DEGRE EGAL OU INFERIEUR A 11. TEMPS DE CALCUL GENERALEMENT INFERIEUR A 13 SECONDES.

099PROGRAM STEPS
PASCAL FAIVRE
CH - DELEMONT

70067D 97-DERIVEE CINQUIEME (POLYNOME DE DEGRE 8)

CE PROGRAMME CALCULE LA DERIVEE CINQUIEME D'UNE FONCTION EN UN POINT EN APPROXIMANT LA DITE FONCTION PAR UN POLYNOME DU 8EME DEGRE

PROGRAM ABSTRACTS

70067D (CONTD)

DANS LE VOISINAGE DU POINT CONSIDERE PUIS EN CALCULANT LA DERIVEE CINQUIEME DE CE POLYNOME. PRECISION: GENERALEMENT 4 CHIFFRES SIGNIFICATIFS EXACTS. RESULTAT ABSOLUMENT EXACT POUR TOUT POLYNOME DE DEGRE EGAL OU INFERIEUR A 8. TEMPS DE CALCUL GENERALEMENT INFERIEUR A 11 SECONDES.

064PROGRAM STEPS
PASCAL FAIVRE
CH - DELEMONT

70068D 97-DERIVEE CINQUIEME (POLYNOME DE DEGRE 10)

CE PROGRAMME CALCULE LA DERIVEE CINQUIEME D'UNE FONCTION EN UN POINT EN APPROXIMANT LA DITE FONCTION PAR UN POLYNOME DE DEGRE 10 DANS LE VOISINAGE DU POINT CONSIDERE, PUIS EN DERIVANT LE POLYNOME AINSI CONSTRUIT 5 FOIS. PRECISION: GENERALEMENT 5 CHIFFRES SIGNIFICATIFS EXACTS. RESULTAT ABSOLUMENT EXACT POUR TOUT POLYNOME DE DEGRE EGAL OU INFERIEUR A 10. TEMPS DE CALCUL GENERALEMENT INFERIEUR A 13 SECONDES.

085PROGRAM STEPS
PASCAL FAIVRE
CH - DELEMONT

70069D 97-DERIVEE SIXIEME (POLYNOME DE DEGRE 8)

CE PROGRAMME CALCULE LA DERIVEE SIXIEME D'UNE FONCTION EN UN POINT EN APPROXIMANT LA DITE FONCTION PAR UN POLYNOME DU 8EME DEGRE DANS LE VOISINAGE DU POINT CONSIDERE; PUIS EN CALCULANT LA DERIVEE SIXIEME DE CE POLYNOME. PRECISION:GENERALEMENT 3 CHIFFRES SIGNIFICATIFS EXACTS. RESULTAT ABSOLUMENT EXACT POUR TOUT POLYNOME DE DEGRE EGAL OU INFERIEUR A 9. TEMPS DE CALCUL GENERALEMENT INFERIEUR A 11 SECONDES.

072PROGRAM STEPS
PASCAL FAIVRE
CH - DELEMONT

70070D 97-DERIVEE SIXIEME (POLYNOME DE DEGRE 10)

CE PROGRAMME CALCULE LA DERIVEE SIXIEME D'UNE FONCTION EN UN POINT EN APPROXIMANT LA DITE FONCTION PAR UN POLYNOME DE DEGRE 10 DANS LE VOISINAGE DU POINT CONSIDERE, PUIS EN CALCULANT LA DERIVEE SIXIEME DE CE POLYNOME. PRECISION:GENERALEMENT 4 CHIFFRES SIGNIFICATIFS EXACTS. RESULTAT ABSOLUMENT EXACT POUR TOUT POLYNOME DE DEGRE EGAL OU INFERIEUR A 11. TEMPS DE CALCUL GENERALEMENT INFERIEUR A 13 SECONDES.

095PROGRAM STEPS
PASCAL FAIVRE
CH - DELEMONT

70071D 97-DERIVEE SEPTIEME (POLYNOME DE DEGRE 10)

CE PROGRAMME CALCULE LA DERIVEE SEPTIEME D'UNE FONCTION EN UN POINT EN APPROXIMANT LA DITE FONCTION PAR UN POLYNOME DE DEGRE 10 DANS LE VOISINAGE DU POINT CONSIDERE, PUIS EN CALCULANT LA DERIVEE SEPTIEME DE CE POLYNOME. PRECISION: GENERALEMENT 3 CHIFFRES SIGNIFICATIFS EXACTS. RESULTAT ABSOLUMENT EXACT POUR TOUT POLYNOME DE DEGRE EGAL OU INFERIEUR A 10. TEMPS DE CALCUL GENERALEMENT INFERIEUR A 13 SECONDES.

082PROGRAM STEPS
PASCAL FAIVRE
CH - DELEMONT

70072D 97-DERIVEE HUITIEME (POLYNOME DE DEGRE 10)

70072D (CONTD)

CE PROGRAMME CALCULE LA DERIVEE HUITIEME D'UNE FONCTION EN APPROXIMANT LA DITE FONCTION PAR UN POLYNOME DU DIXIEME DEGRE DANS LE VOISINAGE D'UN POINT, PUIS EN CALCULANT LA DERIVEE HUITIEME DU POLYNOME EN CE POINT. PRECISION:GENERALEMENT 2 CHIFFRES SIGNIFICATIFS EXACTS. RESULTAT ABSOLUMENT EXACT POUR TOUT POLYNOME DE DEGRE EGAL OU INFERIEUR A 11. TEMPS DE CALCUL GENERALEMENT INFERIEUR A 13 SECONDES.

082PROGRAM STEPS
PASCAL FAIVRE
CH - DELEMONT

70073D 97-DISTRIBUTION NORMALE

CE PROGRAMME PERMET DE CALCULER LA DENSITE DE PROBABILITE ET LA FONCTION DE REPARTITION. PRECISION: 5 CHIFFRES SIGNIFICATIFS JUSTES, ET CELA AVEC UN TEMPS DE CALCUL MINIMAL:SEULEMENT 6 SECONDES CALCULE EGALEMENT LA FONCTION CUMULATIVE ENTRE -U ET +U, AINSI QU' ENTRE U1 ET U2.

101PROGRAM STEPS
PASCAL FAIVRE
CH - DELEMONT

70074D 67-MULTIPLICATIONS GEANTES

PROGRAMME PERMETTANT D'EFFECTUER LE PRODUIT DE 2 NOMBRES TOTALISANT ENSEMBLE 200 DIGITS OU MOINS. (EX. 10 CHIFFRES MULTIPLIES PAR 190 CHIFFRES, 20...180, 30...40, ETC). IL EST EGALEMENT POSSIBLE D'ELEVER AU CARRE UN NOMBRE DE 200 DIGITS OU MOINS. L'EXECUTION DU PROGRAMME EST RAPIDE. PAR EXEMPLE IL FAUT MOINS DE 200 SECONDES POUR UN PRODUIT DE 20 CHIFFRES PAR 170 CHIFFRES, ET 8 SECONDES POUR 10 CHIFFRES MULTIPLIES PAR 10 CHIFFRES

215PROGRAM STEPS
PHILIPPE WETZEL
F - RIEDISHEIM

70075D 67-TUBE A PAROIS EPAISSES

LE PROGRAMME CALCULE LES CONTRAINTES (RADIALE 6 RADIUS ET TANGENTIELLE 6 DIAMETER) AINSI QUE LE DEPLACEMENT U POUR UN TUBE A PAROIS EPAISSES SOUSMIS A UN COUPLE DE PRESSION.UNE PRESSION INTERIEURE PI ET UNE PRESSION EXTERIEURE PE.

092PROGRAM STEPS
STELIO VOYATZOPOULOS
GR - ATHENS

70076D 67-NOMBRES A DONT LE CARRE A2 EST 4A JUXTAPOSITION DE 2 OU 3 CARRES**

CERTIANS NOMBRES A VONT TELS QUE LEURS CARRES A**2 S'ECRIVENT COMME LA JUXTAPOSITON D'UN NOMBRE VARIABLE DE CARRES PARFAITS. LES DEUX PROGRAMMES CI-JOINTS S'APPLIQUENT AUX CAS OU CE DERNIER NOMBRE EST EGAL A 2 OU 3 (POUR LE 1ER PROGRAMME) ET A 4 AU 5 (POUR LE 2EME). ON PEUT DETERMINER A VOLONTE TOUS LES NOMBRES A INFERIEURS A SQRT10**N OU COMPRIS ENTRE SQRT10**M ET SQRT10**N.

173PROGRAM STEPS
JEAN MATHIAN
F - ST DIDIER AU MONT D'OR

70077D 67-NOMBRES A DONT LE CARRE A2 EST LA JUXTAPOSITION DE 4 OU 5 CARRES**

VOIR "PROGRAM ABSTRACT" DU PROGRAMME NO. 70076 D.

223PROGRAM STEPS
JEAN MATHIAN
F - ST DIDIER AU MONT D'OR

70078D 67-RONDE DES REGISTRES

R REGISTRES SONT DISPOSES EN CERCLE (R=4,5, 6 OU 7). CHACUN D'EUX SE TROUVE, AU CHOIX, SOIT DANS 2 ETATS 1 OU 2, SOIT DANS R ETATS:1,2,...R. LE BUT DU JEU EST DE METTRE LES R REGISTRES DANS LE MEME ETAT. POUR CELA, LE CERCLE TOURNE D'UNE FACON ALEATOIRE ET ON PEUT OBTENIR L'ETAT DE 2 REGISTRES CHOISIS ET LES CHANGER A SON GRE. LE NOMBRE DE CHANGEMENTS EST LIMITE.
ON PEUT COMPLIQUER LE JEU DE PLUS EN PLUS: 24 FACON.

220PROGRAM STEPS
PAUL SEBAH
F - MARSEILLE

70079D 67-OPTIQUE PHOTOGRAPHIQUE ELEMENTS BASIQUES

A PARTIR DE TROIS PARAMETRES BASIQUES:FOCALE, OUVERTURE ET DIAMETRE DU CERCLE DE CONFUSION, ET DE DEUX VARIABLES AU CHOIX:DIST. DE PRISE DE VUE+DIMENSION MAX. DU SUJET, ECHELLE DE REPRODUCTION+DIMENSION MAX. DU SUJET, OU DIMENSION MAX. DU SUJET+DIMENSION DE L'IMAGE, IL EST POSSIBLE DE CALCULER LES AUTRES ELEMENTS: HYPERFOCALE, PROFONDEUR DE CHAMP, INTERVALLE DE NETTETE, FACTEUR D'EXPOSITION, TIRAGE. AU TOTAL DIX ELEMENTS.

165PROGRAM STEPS
ERNEST CH GEHRET
CH - GLAND

70080D 67-DISTANCE HYPERFOCALE ET AUTRES ELEMENTS OPTIQUES

APRES INTRODUCTION DE L'OUVERTURE, DE LA FOCALE ET (FACULTATIVEMENT) DU DIAMETRE DU CERCLE DE CONFUSION, DE L'INCREMENT DE DISTANCE, UNE BOUCLE CALCULE ET AFFICHE LES ELEMENTS OPTIQUES NECESSAIRE A LA PRISE DE VUES, ENTRE DEUX DISTANCES FIXEES. LE CALCUL POUR UNE DISTANCE DONNEE EST AUSSI POSSIBLE, DE MEME QUE CELUI DE LA DIMENSION DU SUJET OU DE L'IMAGE EN FONCTION L'UN L'AUTRE.

169PROGRAM STEPS
ERNEST CH GEHRET
CH - GLAND

70081D 67-TANGENTES ET NORMALES

CE PROGRAMME PERMET DE DETERMINER, EN 3 DIMENSIONS, LA TANGENTE A UNE COURBE,LE PLAN NORMAL A UNE COURBE, LE PLAN TANGENT A UNE SURFACE ET LA DROITE NORMALE A UNE SURFACE. LA COURBE SE DEFINIT PAR LES TROIS EQUATIONS PARAMETRIQUES X,Y,Z=1,2,3 (T); LA SURFACE SE DEFINIT PAR L'EQUATION IMPLICITE F(X,Y,Z)=0

164PROGRAM STEPS
JACQUES MAREE
B - NAMUR

70082D 97-ENREGISTREMENT, IMPRESSION DE TEXTES

LA 1ERE PARTIE DU PROGRAMME VOUS PERMET D'ENREGISTRER UN TEXTE SUR CARTE MAGNETIQUE.LA 2E PARTIE VOUS PERMET D'IMPRIMER CE TEXTE AVEC DES LETTRES.

370PROGRAM STEPS
JEAN REIBEL
F - FONTENAY AUX ROSES

70083D 97-MACHINE A ECRIRE

VOUS POUVEZ ECRIRE SUR L'IMPRIMANTE DU HP-97 TOUTES LES LETTRES ET CHIFFRES, AINSI QUE LES SIGNES +,-,/,X,=,(,),_,:.

PROGRAM ABSTRACTS

70083D (CONTD)

202PROGRAM STEPS
JEAN REIBEL
F - FONTENAY AUX ROSES

70084D 67-SUPER MASTERMIND

VOUS CHOISISSEZ LE NOMBRE DE CHIFFRES,QUE VOUS DESIREZ (2 OU 8). LE NOMBRE GENERE PAR LE CALCULATEUR PEUT CONTENIR DES ZEROS ET DES CHIFFRES IDENTIQUES. QUAND VOUS TROUVEZ LE NOMBRE MYSTERIEUX, LE NOMBRE DE PROPOSITIONS EST AFFICHE.

193PROGRAM STEPS
JEAN REIBEL
F - FONTENAY AUX ROSES

70085D 97-CHEMICAL ELEMENTS II/A

CE PROGRAMME EST LE COMPLEMENT POUR HP-97 DU PROGRAMME "CHEMICAL ELEMENTS II/A". IL PERMET D'INSCRIRE SUR L'IMPRIMANTE DU HP-97 LE SYMBOLE ET LE NOM D'UN ELEMENT CHIMIQUE ET CELA EN LETTRES]

224PROGRAM STEPS
JEAN REIBEL
F - FONTENAY AUX ROSES

70086D 67-EQUATIONS ET FONCTIONS

CE PROGRAMME REGROUPE CERTAINS CALCULS COURANTS SOUVENT REUNIS DANS UN MEME PROBLEME (FONCTIONS, DERIVEES, INTEGRALES DEFINIES, RACINES ET MAXI-MINI DE F(X) EVITANT AINSI DE CHANGER DE PROGRAMME ET DE TABULER PLUSIEURS FOIS LA DEFINITION DE F(X). PAR SON APTITUDE A LA RECHERCHE DES RACINES ET SURTOUT DES MAXIMA DE LA FONCTION, IL PEUT ETRE EGALEMENT UTILE POUR LE TRACE DES FONCTIONS, EN PARTICULIER DES FONCTIONS OSCILLANTES.

188PROGRAM STEPS
JEAN HORVILLE
F - GENTILLY

70087D 67-MOMENT DYNAMIQUE D'UN CORPS DE REVOL DE SECTION POLYGONALE

CE PROGRAMME CALCULE LE POIDS, LA POSITION DU CENTRE DE GRAVITE ET LE MOMENT DYNAMIQUE DES CORPS DE REVOLUTION DONT LA SECTION EST POLYGONALE ET TOURNE AUTOUR DE L'AXE DE REVOLUTION.

156PROGRAM STEPS
ALAIN CHAPPUIS
CH - WINTERTHUR

70088D 67-SOMME DE TROIS OU QUATRE CARRES

CE PROGRAMME N'EST PAS ENTIEREMENT NOUVEAU. EN PARTICULIER IL A REPRIS CERTAINS PRINCIPES DE CALCULS DU PROGRAMME 52323. CEPENDANT IL EN DIFFERE TOTALEMENT EN CE QUI CONCERNE LA SORTIE DES RESULTATS.DANS CE NOUVEAU PROGRAMME LES RESULTATS SONT LUS DIRECTEMENT ET PAR GROUPE DE 3 OU 4 CHIFFRES, ALORS QUE LA METHODE DU PROGRAMME 53323, FORT INGENIEUX, NECESSITE DAVANTAGE D' INTERVENTIONS DE L'OPERATEUR.

212PROGRAM STEPS
JEAN MATHIAN
F - ST DIDIER AU MONT D'OR

70089D 67-SOMME DE DEUX, TROIS OU QUATRE CUBES (N=X**3+Y**3+Z**3+W**3)

CE PROGRAMME RECHERCHE LES NOMBRES "N" EGAUX OU SUPERIEURS A UN NOMBRE DONNE NO ET QUI PEUVENT SE DECOMPOSER EN UNE SOMME DE QUATRE CUBES PARFAITS. POUR CHAQUE VALEUR DE N ACCEPTABLE, IL DETERMINE EN OUTRE X,Y,Z ET W. CE PROGRAMME PEUT ETRE UTILISE DE DEUX MANIERES: SOIT EN ACCEPTANT LES SOLUTIONS OU W=0, QUI CORRESPONDENT A DES DECOMPOSITIONS

70089D (CONTD)

EN 3 OU MEME 2 CUBES, SOIT EN ELIMINANT CES SOLUTIONS PARTICULIERES.

193PROGRAM STEPS
JEAN MATHIAN
F - ST DIDIER AU MONT D'OR

70090D 97-FACTORISATION RAPIDE D'UN NOMBRE ENTIER

CE PROGRAMME DONNE LA DECOMPOSITION EN FACTEURS PREMIERS D'UN ENTIER POSITIF N'AYANT PAS PLUS DE DIX CHIFFRES. IL A ETE HAUTEMENT OPTIMISE; LA DECOMPOSITION LA PLUS LONGUE DEMANDE 3 HEURES 18 MINUTES (EN GENERAL PLUS DE 4 HEURES POUR UN AUTRE PROGRAMME). LA TOUCHE 'E' PERMET D'UTILISER LE PROGRAMME : FONCTIONS ARITHMETIQUES.

217PROGRAM STEPS
JEAN LAGRANGE
F - REIMS

70091D 97-FONCTIONS ARITHMETIQUES

A PARTIR DE LA DECOMPOSITION EN FACTEURS PREMIERS D'UN ENTIER, CE PROGRAMME CALCULE LES FONCTIONS ARITHMETIQUES SUIVANTES: INDICATEUR D'EULER, EXPOSANT UNIVERSEL NOMBRE DE DECOMPOSITION EN SOMME DE DEUX CARRES, NOMBRES DES DIVISEURS, SOMME DES DIVISEURS, SOMME DES PUISSANCES DES DIVISEURS. CE PROGRAMME FAIT SUITE AU PROGRAMME 'FACTORISATION RAPIDE D'UN NOMBRE ENTIER' NR. 70090; CEPENDANT IL PEUT ETRE UTILISE INDEPENDAMMENT.

214PROGRAM STEPS
JEAN LAGRANGE
F - REIMS

70092D 67-PHOTONS 9 MEV CALCUL DU RENDEMENT ET DU DEBIT PAR TOP

PROGRAMME POUR LES CALCULS DE ROUTINE POUR UN FAISCEAU DE PHOTONS DE 9 MEV ISSUS D'UN ACCELERATEUR LINEAIRE DE TYPE NEPTUNE 10.CALCULE LE RENDEMENT EN PROFONDEUR POUR UN CHAMP D'IRRADIATION DE TAILLE DONNEE, A UNE PROFONDEUR DONNEE ET POUR UNE DISTANCE SOURCE PEAU DE 100 CM.
PROGRAMME DESTINE AUX RADIOPHYSICIENS TRAVAILLANT DANS LA RADIOTHERAPIE.

217PROGRAM STEPS
NGUYEN-THUY-THAI
F - LE HAVRE

70093D 67-ECHANTILLON ET LOI NORMALE

A PARTIR D'UN ECHANTILLONNAGE DONNE DE VALEURS REGROUPEES AUTOUR D'UNE VALEUR MOYENNE SUPPOSEE EXISTANTE, LE PROGRAMME CALCULE LA VALEUR MOYENNE THEORIQUE ET L'ECART TYPE ENTRE LES DIFFERENTES VALEURS, CORRESPONDANT A LA LOI NORMALE. POUR TOUTE VALEUR ENTREE ENSUITE, LE PROGRAMME CALCULE SA FREQUENCE THEORIQUE D'APPARITION, ET INVERSEMENT. ON CALCULE AUSSI LE POURCENTAGE DE CHANCE DE TOMBER ENTRE DEUX VALEURS DONNEES QUELCONQUES.

151PROGRAM STEPS
BENOIT LEMERCIER
B - BRUXELLES

70094D 67-COMPTAGE EN BASE B

CONCU DANS UN BUT PEDAGOGIQUE, CE PROGRAMME PERMET DE VISUALISER UN COMPTAGE (1,2,3 ETC) DANS UNE BASE B QUELCONQUE,AINSI QUE CE PROCESSUS DE CE COMPTAGE.
EXEMPLE: BASE 2 AFFICHAGE DE 0,1,2 PUIS 10. UNE INSTRUCTION PARTICULIERE TRAITE DE LA BASE 60.

224PROGRAM STEPS
JEAN REIBEL

70094D (CONTD)

F - FONTENAY AUX ROSES

70095D 67-NOMBRES ORDONNES

CE PROGRAMME ORDONNE UNE SUITE DE NOMBRES (MAX 23) ENTREE DANS LE DESORDRE.

211PROGRAM STEPS
JEAN REIBEL
F - FONTENAY AUX ROSES

70096D 67-VISCOSITE, LIBRE PARCOURS MOYEN, CONVERSION DE TEMPERATURES

CE PROGRAMME PERMET DE CALCULER LA VISCOSITE DE L'HELIUM ET DE L'HYDROGENE LE LIBRE PARCOURS MOYEN D'UNE MOLECULE ET DE CONVERTIR CERTAINES UNITES DE TEMPERATURE EN D'AUTRES.

146PROGRAM STEPS
ALAIN BERGER
CH - BOUDRY

70097D 67-CALCUL DE BOBINES D'ELECTROVANNES

CONNAISSANT LES CARACTERISTIQUES DIMENSIONNELLES D'UNE BOBINE AINSI QUE SON CIRCUIT DE COMMANDE, CE PROGRAMME PERMET DE CALCULER CERTAINS PARAMETRES INTERESSANTS DE CETTE BOBINE.

148PROGRAM STEPS
ALAIN BERGER
CH - BOUDRY

70098D 67-CALCULS DES COMPOSANTS DE DIFFERENTS REGULATEURS

CE PROGRAMME PERMET DE CALCULER LES COMPOSANTS NECESSAIRES A LA REALISATION DE DIFFERENTS TYPES DE REGULATEURS OU FILTRES.

161PROGRAM STEPS
ALAIN BERGER
CH - BOUDRY

70099D 67-97 POINT PAR 2 HAUTEURS (TRANSPORT AVEC POINT ESTIME)

BASE SUR UNE METHODE PROPOSEE PAR G BODENEZ, CE PROGRAMME TRAITE LE PROBLEME DE 2 HAUTEURS ASTRO PRISES D'UN MOBILE ET DONNE LES 2 POINTS POSSIBLES. LES ENTREES SONT: POINT ESTIME POUR L'HEURE DESIREE DU POINT, ET, POUR CHAQUE OBSERVATION, POINT ESTIME, ANGLE HORAIRE PREMIER MERIDIEN, DECLINAISON ET HAUTEUR VRAIE.

179PROGRAM STEPS
JEAN THIBERGE
F - CHERBOURG

70100D 67-97 POINT PAR 2 HAUTEURS D'ASTRES (TRANSPORT AVEC ROUTE-VITESSE)

BASE SUR UNE METHODE PROPOSEE PAR G BODENEZ, CE PROGRAMME TRAITE LE PROBLEME DE 2 HAUTEURS ASTRO PRISES D'UN MOBILE ET DONNE LES 2 POINTS POSSIBLES. LES ENTREES SONT: HEURE DESIREE DU POINT ET POINT ESTIME A CETTE HEURE, ROUTE ET VITESSE FOND, ET, POUR CHAQUE OBSERVATION, HEURE, ANGLE HORAIRE PREMIER MERIDIEN, DECLINAISON ET HAUTEUR VRAIE.

222PROGRAM STEPS
JEAN THIBERGE
F - CHERBOURG

70101D 67-97 POINT PAR N HAUTEURS D'ASTRES (TRANSPORT AVEC POINT ESTIME)

BASE SUR UNE METHODE PROPOSEE PAR G BODENEZ, CE PROGRAMME CALCULE LE POINT PAR N HAUTEURS ASTRO PRISES D'UN MOBILE. DONNESS SONT: POINT ESTIME POUR HEURE DESIREE DU POINT,

70101D (CONTD)

ET, POUR CHAQUE OBSERVATION, POINT ESTIME, ANGLE HORAIRE PREMIER MERIDIEN, DECLINAISON ET HAUTEUR VRAIE.

191PROGRAM STEPS
JEAN THIBERGE
F - CHERBOURG

70102D 67-97 POINT PAR N HAUTEURS D'ASTRES (TRANSPORT AVEC ROUTE-VITESSE)

BASE SUR UNE METHODE PROPOSEE PAR G BODENEZ, CE PROGRAMME CALCULE LE POINT PAR N HAUTEURS ASTRO PRISES D'UN MOBILE. DONNEES SONT: HEURE DESIREE DU POINT ET POINT ESTIME A CETTE HEURE, ROUTE ET VITESSE FOND, ET, POUR CHAQUE OBSERVATION, HEURE, ANGLE HORAIRE PREMIER MERIDIEN, DECLINAISON ET HAUTEUR VRAIE.

224PROGRAM STEPS
JEAN THIBERGE
F - CHERBOURG

70103D 67-97 COORDONNEES GEOGRAPHIQUES PAR N OBSERVATIONS ASTRONOMIQUES

BASE SUR UNE METHODE PROPOSEE PAR G BODENEZ, CE PROGRAMME DONNE LES COORDONNEES GEOGRAPHIQUES A PARTIR DE N OBSERVATIONS ASTRONOMIQUES, LES ENTREES ETANT:AH PREMIER MERIDIEN, DECLINAISON ET HAUTEUR VRAIE. CERTAINS DE CES ELEMENTS PEUVENT ETRE CALCULEES PAR CE PROGRAMME EN Y INCLUANT LES ROUTINES ADEQUATES.

146PROGRAM STEPS
JEAN THIBERGE
F - CHERBOURG

70104D 67 - CONTRAINTES SUR UNE SPHERE A PAROIS EPAISSES

LE PROGRAMME CALCUL LA DISTRIBUTION DES CONTRAINTES D'UNE SPHERE A PAROIS EPAISSES, SOUMISE A UNE PRESSION EXTERIEURE AINSI Q'UNE PRESSION INTERIEURE.

080PROGRAM STEPS
STELIO VOYATZOPOULOS
GR - ATHENS

70105D 67 - CORRELATION-REGRESSION LIN. -LOT DE REFERENCE CONSTANT

CORRELATION ET REGRESSION LINEAIRE A PARTIR D'UN LOT DE REFERENCE CONNU DE 38 PIECES MAXIMUM. LES VALEURS DOIVENT ETRE POSITIVES ET INFERIEURES A 10**5. LES VALEURS DE REFERENCE SONT ENREGISTREES ET STOCKEES. ON PEUT S'Y REFERER SANS AVOIR A LES INTRODUIRE A CHAQUE FOIS.

298PROGRAM STEPS
DAVID GILLES
F - NOYON

70106D 67-97 NAVISPHERE

VERSION NOUVELLE DE LA NAVISPHERE, CE PROGRAMME, CONNAISSANT POSITION GEOGRAPHIQUE ET DATE, CALCULE POUR HEURE GMT DONNEE PAR L'UTILISATEUR, OU CELLE DU CREPUSCULE OU DE L'AUBE QU'IL PEUT AUSSI DONNER, LA HAUTEUR DE 42 ETOILES BRILLANTES (PARMI LES 81 DES EPHEM. NAUT.) BIEN REPARTIES SUR LA SPHERE CELESTE, DONNANT NO D'ORDRE, HAUTEUR ET RELEVEMENT DES SEULES ETOILES VISIBLES. CARTE DE DONNEES VALIDE PLUS DE 20 ANS POUR POSITIONS PRECISES A MIEUX QUE 12'.

224PROGRAM STEPS
JEAN THIBERGE
F - CHERBOURG

70107D 97-RESIDU DE PUSSANCE

CE PROGRAMME CALCULE X**N MOD M. X EST UN ENTIER QUELCONQUE, N ET M SONT DEUX ENTIERS STRICTEMENT POSI-

70107D (CONTD)

TIFS. L'ALGORITHME UTILISE EST L'ALGORITHME BINAIRE. LA SEULE LIMITATION AU PROGRAMME EST QUE LES ENTIERS N'AIENT PAS PLUS DE DIX CHIFFRES.

224PROGRAM STEPS
JEAN LAGRANGE
F - REIMS

70108D 67 - COBALT 60 DEBIT DE DOSE SUR L'AXE. METHODE DU RTA

LE PROGRAMME CALCULE LE DEBIT DE DOSE SUR L'AXE DANS UN FAISEAU DE RAYONNEMENT DU COBALT 60, EN TENANT COMPTE DE LA DECROISSANCE RADIOACTIVE DU COBALT, DE LA DISTANCE ENTRE LA SOURCE ET LA SURFACE D' ENTREE, DE LA PROFONDEUR DU POINT DE CALCUL ET DE LA TAILLE DU CHAMP. POUR UNE DOSE DONNEE, ON PEUT AUSSI CALCULER LA DUREE NECESSAIRE D'EXPOSITION. UTILISABLE POUR LES CALCULS DE ROUTINE EN RADIOTHERAPIE.

208PROGRAM STEPS
NGUYEN-THUY-THAI
F - LE HAVRE

70109D 67 - NAVIGATION VFR

POUR MAINTENIR UNE ROUTE SPECIFIQUE LE PILOTE DOIT DETERMINER L'EFFET DU VENT SUR LE VOL. CE PROGRAMME PERMET DE DETERMINER CET EFFET, ET LE TEMPS AVEC VENT ENTRE 2 POINTS. DE PLUS LE PROGRAMME DETERMINE LA SOLUTION DU PROBLEME EN FONCTION DES VARIABLES INTRODUITES, CE QUI FAVORISE SON UTILISATION PRATIQUE.

224PROGRAM STEPS
JACQUES MASSON
CH - ST SULPICE

70110D 97 - UNITE FONDAMENTALE D'UN CORPS QUADRATIQUE, EQUATION DE PELL

SOIT D UN ENTIER POSITIF NON CARRE PARFAIT, LE PROGRAMME CALCULE L' UNITE FONDAMENTALE DU CORPS QUADRATIQUE DE DISCRIMINANT D OU 4D SUIVANT QUE D EST CONGRU A 1 MOD 4 OU NON. AUTREMENT DIT ON OBTIENT LA PLUS PETITE SOLUTION DE L'EQUATION DE PELL X**2-D*(Y**2)=N AVEC N EGAL 4 OU -4; ON OBTIENT EGALEMENT LA PLUS PETITE SOLUTION AVEC N EGAL 1 OU -1.

196PROGRAM STEPS
JEAN LAGRANGE
F - REIMS

70111D 67-97 BIORYTHMES

CE PROGRAMME CALCULE LA VALEUR DES 3 CYCLES (CYCLE PHYSIQUE, CYCLE EMOTIONNEL ET CYCLE INTELLECTUEL) QUI DEFINISSENT LES BIORYTHMES. IL CALCULE EGALEMENT LA PENTE DE LA COURBE A CET ENDROIT, C'EST A DIRE LE "MODE DE VARIATION DU CYCLE" (VITESSE DE VARIATION)

119PROGRAM STEPS
FRANCOIS BALSALGBRE
F - SAINT-ETIENNE

70112D 67-VOYAGE TERRE-LUNE THEORIQUE -D' ORBITE ELLIPTIQUE A ORBITE ELLIPT.

D'UNE ORBITE ELLIPTIQUE H1,H'1 A UNE ORBITE ELLIPTIQUE H'1 H2 AUTOUR DE LA TERRE, ON PASSE A UNE ORBITE ELLIPTIQUE HL, H'L AUTOUR DE LA LUNE PAR CAPTAGE.
H2¬420.000 KM HL¬66.000 KM

221PROGRAM STEPS
CLAUDE GUINARD
F - GUINGAMP

70113D 67 - CALCUL RAPIDE HONORAIRES CHIRURGIEN-DENTISTE FRANCAIS

70113D (CONTD)

CE PROGRAMME CALCULE LES HONORAIRES DU CHIRURGIEN-DENTISTE FRANCAIS, SUIVANT LEUR CODIFICATION EN LETTRES- CLES OFFICIELLES,CONFORMES A LA LEGISLATION DES CAISSES MALADIE, ET EN FONCTION DES TARIFS "CONVENTIONNELS", EVOLUTIFS.

061PROGRAM STEPS
PIERRE MOELLO
F - REIMS

70114D 67-DE LA TERRE A L'EQUIGRAVITE LUNAIRE- VOYAGE TERRE-LUNE I

CE PROGRAMME CALCULE EN FONCTION DE VO, HO, VALEURS DE LA VITESSE ET DE L'ALTITUDE AU PERIGE. 1)EXENTRICITE DE L'ORBITE 2)ANGLE DU RAYON VECTEUR AVEC L'AXE PERIGE POUR UNE DISTANCE VOISINE DE 320.000 KM CORRESPONDANT A L'EQUIGRAVITE ET V VITESSE DU VEHICULE A CETTE DISTANCE 3)TEMPS DE PARCOURS ENTRE LA DISTANCE RA=R+HO ET R1, 4)VC VITESSE CIRCULAIRE A L'ALTITUDE HO 5)SUPPLEMENT DE VITESSE AU PERIGE.

193PROGRAM STEPS
CLAUDE GUINARD
F - GUINGAMP

70115D 67-PERMUTATIONS

LE PROGRAMME EFFECTUE TOUS LES CALCULS DANS LE GROUPE DES PERMUTATIONS D'UNE ENSEMBLE DE N ELEMENTS POUR N COMPRIS ENTRE 1 ET 9: PERMUTATION COMPOSEE DE DEUX PERMUTATIONS: INVERSE D'UNE PERMUTATION: SOUS-GROUPE ENGENDRE PAR UNE PERMUTATION:DECOMPOSITION D'UNE PERMUTATION EN PRODUIT DE CYCLES:DECOMPOSITION EN PRODUIT DE TRANSPOSITIONS ET PARITE D'UNE PERMUTATION

176PROGRAM STEPS
GOUIN
F - NANTES

70116D 97-CALCUL DE L'ELLIPSE DE CONFIANCE DANS UNE VARIANTE SYSTEMATIQUE

A PARTIR DE RESULTATS D'ESSAIS DE VARIANTES SYSTEMATIQUES D'ORDRE 3 COMPRENANT AU MOINS 3 REPETITIONS LE CALCULATEUR DETERMINE LES POINTS DES ELLIPSES DE CONFIANCES ANIONIQUES OU CATIONIQUES INSCRITES DANS UN DIAGRAMME TRIANGULAIRE POUR UNE PROBABILITE P=0,05 -THEORIE D'HOMES CE PROGRMME ACCOMPAGNERAIT TRES BIEN LE PROGRAMM NO 51000 D

183PROGRAM STEPS
GUY CESAR
F - LE BONO

70117D 67-DE L'EQUIGRAVITE A LA LUNE VOYAGE TERRE-LUNE II

CE PROGRAMME VISUALISE L'ALTITUDE DU PERIGE, LA VITESSE AU PERIGE, LA VITESSE CIRCULAIRE ET LE DELTA DE CIRCULARISATION AUTOUR DE LA LUNE. IL CALCULE EGALEMENT CL,NL,O'L,EL NECESSAIRES AU CALCUL DU TEMPS DE PASSAGE DE L'EQUIGRAVITE AU PERIGE

218PROGRAM STEPS
CLAUDE GUINARD
F - GUINGAMP

70118D 67-DEVELOPPEMENT FONCTION DE LA TEMPERATURE

CONNAISSANT LES PARAMETRES BASIQUE: TEMPERATURE ET DUREE STANDARD, AINSI QUE LE FACTEUR DE TEMPERATURE CARACTERISTIQUE DU MATERIEL, ON PEUT CALCULER LA DUREE DE DEVELOPPEMENT CORRESPONDANT A UNE TEMPERATURE DONNEE, OU LA TEMPERATURE NECESSAIRE A UNE DUREE DE DEVELOPPEMENT DETERMINEE.

080PROGRAM STEPS

70118D (CONTD)

ERNEST CH GEHRET
CH - GLAND

70119D 67-ORDONNANCE, STOCKAGE ET TEST DE VALEURS

GROUPE DE 7 PROGRAMMES DE STOCKAGE D'ORDONNANCE ET DE CONTROLE DES REGISTRES-MEMOIRES ET DES VALEURS QU'ILS CONTIENNENT: STOCKAGE DANS REGISTRES CONSECUTIFS, EN ORDRE CROISSANT OU DECROISSANT,DE VALEURS SUCCESSIVEMENT INTRODUITES OU MEMORISEES DANS UN ORDRE QUELCONQUE. AFFICHAGE DES REGISTRES OCCUPES OU ENCORE LIBRES.

173PROGRAM STEPS
ERNEST CH GEHRET
CH - GLAND

70120D 67-AGRANDISSEMENT CIBACHROME NOUVELLES EMULSIONS CCP-D182

QUELQUES AMELIORATIONS DES EMULSIONS CIBACHROME,DANS LE COURANT DE 1979,CONCERNANT LES ECARTS A LA LOI DE RECIPROCITE ET LES VARIATIONS DE FILTRAGE EN FONCTION DU RAPPORT D'AGRANDISSEMENT (DUREE D'EXPOSITION) NOUS ONT AMENE A MODIFIER LES EQUATIONS PROPOSEES DANS LE PROGRAMME ORIGINAL NO 70019.

153PROGRAM STEPS
ERNEST CH GEHRET
CH - GLAND

70121D 67-DYNAMIC BALANCING IN ONE PLANE

ON NOTE L'AMPLITUDE DES VIBRATIONS ET L'ANGLE DE PHASE D'ABORD SUR LE CORPS A EQUILIBRER, PUIS APRES L'AJOUTE D'UN POIDS QUELCONQUE A UN ANGLE QUELCONQUE.LE PROGRAMME DONNE L'AMPLITUDE ET LA POSITION ANGULAIRE DE VECTEUR CORRESPONDANT A L'EFFET DU BALOURD AUXILIAIERE SEUL PUIS EN UTILISANT "R/S" ON A L'ANGLE DONT IL FAUT DEPLACER LE BALOURD AUXILIAIRE AINSI QUE LE COEFFICIENT DE CORRECTION DU POIDS DU BALOURD AUXILIAIRE.

018PROGRAM STEPS
DACIER JACQUES
B - LIEGE

70122D 67-DIVISIONS DE POLYNOMES

CE PROGRAMME EFFECTUE LA DIVISION SUIVANT LES PUISSANCES DECROISSANTES DE DEUX POLYNOMES DE DEGRES INFERIEUR A 9. IL DETERMINE LE QUOTIENT AINSI QUE LE RESTE.

114PROGRAM STEPS
MASSON JACQUES
CH - ST SULPICE

70123D 67-ATTAQUE NUCLEAIRE

CE JEU EST SIMILAIRE A LA BATAILLE NAVALE. AU LIEU DE COULER DES NAVIRES, IL SAGIT DE DETRUIRE UN SILO NUCLEAIRE. 5 SILOS SONT DISPOSES SUR UN QUADRILLAGE DE 10/10. CHAQUE SILO N'OCCUPE QU'UN SEUL CARREAU. DE PLUS LE JEU POSSEDE 2 DEGRES DE DIFFICULTE. LE PREMIER INDIQUE A CHAQUE TIR LA DISPOSITION GEOGRAPHIQUE DES SILOS PAR RAPPORT A LA CASE VISEE. LA DEUXIEME NE L'INDIQUE QUE SI UN SILO EST TOUCHE.

159PROGRAM STEPS
JACQUES MASSON
CH - ST SULPICE

70124D 67-DE L'EQUIGRAVITE A LA LUNE DUREE DU VOYAGE

LA TRAJECTOIRE ETANT HYPERBOLIQUE ENTRE L'EQUIGRAVITE ET LA LUNE, CE PROGRAMME CALCULE LA DUREE DU VOYAGE JUSQU'AU DEGRE LUNAIRE.

70124D (CONTD)

LA PARTIE 2) DU PROGRAMME DETERMINE A PARTIR DU PERIGE LUNE-TERRE ET DE L'ANGLE DE LA LUNE AVEC L'AXE PERIGE APOGE LA VITESSE DE LA LUNE. ELLE EST INDEPENDANTE DE LA PREMIER.

129PROGRAM STEPS
CLAUDE GUINARD
F - GUINGAMP

70125D 67-EQUILIBRAGE DYNAMIQUE DANS 2 PLANS

LE PROGRAMME DONNE, POUR CHACUN DES 2 PLANS, LE POIDS CORRECTIF FINAL ET SA POSITION ANGULAIRE. TROIS LANCERS DE LA MACHINE TOURNANTE SONT NECESSAIRES. LE PREMIER LANCER SE FAIT SANS BALOURD AUXILIAIRE; LES 2 AUTRES LANCERS SE FONT AVEC UN BALOURD QUELCONQUE PLACE A UN ANGLE QUELCONQUE DANS LE PLAN 1 LA PREMIERE FOIS, PUIS DE MEME DANS LE PLAN 2.

168PROGRAM STEPS
JACQUES DACIER
B - LIEGE

70126D 67-TRANSFERT DE HOMMANN

DETERMINATION DES PARAMETRES DES ORBITES INITIAUX ET FINAUX ET DE CEUX DE LA TRAJECTOIRE DE TRANSFERT DE HOMMANN. D'UNE ORBITE CIRCULAIRE A UNE AUTRE. CE PROGRAMME DONNE LES PERIODES, TEMPS DE TRANSFERT, EXENTRICITE, VITESSES, IMPULSIONS UTILES.

190PROGRAM STEPS
CLAUDE GUINARD
F - GUINGAMP

70127D 67-CALCUL DE TAUX D'INTERET VRAI ANNUEL D'UN PLACEMENT A TERME

CE PROGRAMM DONNE AVEC UNE PRECSION DE 0,01 A 0,0001% LE TAUX D'INTERET VRAI ANNUEL A TERME ECHU D'UN PLACEMENT OU D'UN EMPRUNT A MENSUALITES FIXE EXESSIVEMENT RAPIDEMENT EN MOINS DE 30 SECONDES. LA PRECISION DECROIT QUAND LA RAPIDITE CROIT.
MOINS DE 15 SECONDES DE CALCUL POUR UNE PRECISION DE 0,1%
UN ORDRE DE GRANDEUR OU TUAX EST SOUHAITE.

127PROGRAM STEPS
GUINARD CLAUDE
F - GUINGAMP

70128D 97-POLYNOME DE COLOCATION: FORMULES DE GAUSS.

A PARTIR SOIT DE DONNEES DISCRETES (XI,YI), SOIT D'UNE FONCTION Y(X) DEFINIE PAR L'UTILISATEUR, LE PROGRAMME CALCULE LES DIFFERENCES FINIES DE Y(X), PUIS LA VALEUR APPROCHEE OU INTERPOLEE P(XK) D'UN POLYNOME DE DEGRE N,POUR UNE VALEUR QUELCONQUE DE X, PAR LES FORMULES DIRECTE OU INVERSE DE GAUSS.

155PROGRAM STEPS
ANDRE JACCOMARD
F - LA TRINITE S/MER

70129D 97-POLYNOME DE COLOCATION: FORMULE DE NEWTON

A PARTIR SOIT DE DONNEES DISCRETES (XI,YI), SOIT D'UNE FONCTION UTILISATEUR Y(X), LE PROGRAMME CALCULE LES DIFFERENCES FINIES YK+1 -YK DE Y(XI), PUIS LA VALEUR APPROCHEE OU INTERPOLEE DE Y(X) POUR UNE VALEUR QUELCONQUE DE X, PAR LES FORMULES DIRECTE OU INVERSE DE NEWTON.

152PROGRAM STEPS
JACCOMARD ANDRE
F - LA TRINITE S/MER

70130D 67-CORRECTION DE TRAJECTOIRE VOYAGE TERRE-LUNE (ANNEXE)

A PARTIR DE LA VARIATION DE VITESSE COLINEARE A LA VITESSE DU VEHICULE, CE PROGRAMME PERMET, CONNAISSANT LA DISTANCE TERRE ENGIN A LA CORRECTION DE MESURER LES NOUVELLES VALEURS DE HO, VO CORRESPONDANT A LA NOUVELLE ORBITE.
LES PROGRAMMES I,II,III PERMETTENT ALORS DE CALCULER LES NOUVEAUX PARAMETRES DE L'ORBITE LUNAIRE CORRESPONDANT LA LA CORRECTION DE TRAJECTOIRE.

091PROGRAM STEPS
CLAUDE GUINARD
F - GUINGAMP

70131D 67-DUREE DU TRAJET EQUIGRAVITE ORBITE LUNAIRE (PERIGE) PROGR. III

A PARTIR DE CL,NL,EL,C'L PARAMETRES APRES CAPTAGE PAR LA LUNE, CE PROGRAMME VOUS DONNERA A L'AIDE DES PROGRAMMES I ET II LA DUREE DU TRAJET EQUIGRAVITE, PERIGE LUNE (TRAJECTOIRE HYPERBOLIQUE) EN HEURES, MINUTES, SECONDES.
LE PROGRAMME ANNEXE CALCULE LA CORRECTION DE TRAJECTOIRE.

079PROGRAM STEPS
CLAUDE GUINARD
F - GUINGAMP

70132D 67-CALCULS SOLAIRES

CALCUL L'AZIMUT DU LEVER ET DU COUCHER DU SOLEIL.

093PROGRAM STEPS
MARC VAN BUGGENHOUT
B - BRUXELLES

70133D 67-OPTIQUE PHOTOGRAPHIQUE ELEMENTS BASIQUES

A PARTIR DE 3 ELEMENTS BASIQUES: FOCALE, INVERSE DU DIAMETRE DU CERCLE DE CONFUSION ET DIAPHROGME ON CALCULE LES PARAMETRES PRINCIPAUX DE LA PRISE DE VUES. CONNAISSANT LA DISTANCE HYPERFOCALE ET LA DISTANCE, ON OBTIENT: PROFONDEUR DE CHAMP,DISTANCE EXTREMES DE NETTETE, ECHELLE,FACTEUR D'EXPOSITION,TIRAGE -ON OBTIENT LA DIMENSION DE L'IMAGE CONNAISSANT CELLE DU SUJET, OU INVERSEMENT.

175PROGRAM STEPS
ERNEST CH GEHRET
CH - GLAND

70134D 67-ANALYSE CHIMIQUE % THEORIQUE DES ELEMENTS CONSTITUTIFS

CONNAISSANT LA FORMULE BRUTE DE LA SUBSTANCE, CONTENANT JUSQU'A 8 ELEMENTS OPTIONNELS,IL EST POSSIBLE DE CALCULER LE POURCENTAGE THEORIQUE DE CHACUN D'ENTRE EUX. LES POIDS ATOMIQUES CORRESPONDANTS ONT ETE MEMORISES PREALABLEMENT. ON PEUT LES INTRODUIRE DE R1 A R8 AU MOYEN D'UNE CARTE DE DONNEES. LES RESULTATS SONT AFFICHES CONSECUTIVEMENT.

175PROGRAM STEPS
ERNEST CH GEHRET
CH - GLAND

70135D 67-ANALYSE CHIMIQUE FORMULE BRUTE

CONNAISSANT LE POURCENTAGE DES ELEMENTS DONNES DANS UNE MOLECULE CONTENANT JUSQU'A 5 ELEMENTS OPTIONNELS, CE PROGRAMME PERMET DE CALCULER SA FORMULE CHIMIQUE BRUTE.

182PROGRAM STEPS
ERNEST CH GEHRET
CH - GLAND

70136D 67-INTERPOLATION PAR LA FORMULE DE LAGRANGE

F(X) ETANT DEFINI PAR K POINTS D'ABSCISSES EQUIDISTANTES (H), LE PROGRAMME CALCULE F(X0+PXH); IL ENREGISTRE LES K POINTS (K<18) OU PREENREGISTRE JUSQU'A 17 POINTS (DANS CE CAS, L'UTILISATEUR FIXE X0 SUIVANT SES BESOINS): PLUSIEURS INTERPOLATIONS SONT ALORS POSSIBLES AVEC UNE SEULE ENTREE DE DONNEES.

100PROGRAM STEPS
JEAN THIBERGE
F - CHERBOURG

70137D

70138D

70139D

70140D

70141D

70142D 67-IMPACT SUR LA LUNE

70142D (CONTD)

00000D DE LA TERRE A LA LUNE BIS

PROGRAMME III BIS
CE PROGRAMME CALCULE:1) LA VITESSE D'ARRIVEE SUR LA LUNE ET L'ANGLE DE L'AXE TERRE-LUNE AVEC L'ANGLE POLAIRE LUNAIRE DE L'IMPACT.
2) LE TEMPS OU LA DUREE DU TRAJET EQUIGRAVITE-IMPACT LUNAIRE.
CE PROGRAMME FAIT SUITE AUX PROGRAMMES 70114-70117

177PROGRAM STEPS
CLAUDE GUINARD
F - GUINGAMP

70143D 67-COURSE AUTOMOBILE

CE JEU PEUT SE JOUER ENTRE 2 CONCURRENTS OU PLUS. IL PEUT MEME SE JOUER SEUL. POUR GAGNER, IL FAUT AVOIR PARCOURU LA PLUS GRANDE DISTANCE AVEC UN RESERVOIR DE 100 UNITES DE CARBURANT OU ALORS AVOIR EFFECTUE LA PLUS GRANDE VITESSE, TOUJOURS AVEC 100 UNITES DE CARBURANT. L'ECRAN AFFICHE EN MEME TEMPS LA VITESSE & LA DISTANCE PARCOURUE. POUR AVOIR LES RESULTATS APPUYER SUR E 1)DISTANCE 2) VITESSE

105PROGRAM STEPS
ALAIN UYTTEBROECK
B - GILLY

70144D 67-ANALYSE CHIMIQUE. DETERMINATION DE LA FORMULE BRUTE (DE 1 A 8 ELEM)

CONNAISSANT LE POURCENTAGE DE CHAQUE ELEMENT COMPOSANT UNE MOLECULE, POUVANT CONTENIR 8 ELEMENTS OPTIONNELS AU MAXIMUM, DONT LES POIDS ATOMIQUES SONT MEMORISES, MANUELLEMENT OU PAR L'INTERMEDIAIRE D'UNE CARTE DE DONNEES,CE PROGRAMME CALCULE LE NOMBRE D'ATOMES DE CHAQUE ELEMENT PRESENT, DANS LA MOLECULE, CONSIDEREE. LE POIDS MOLECULAIRE DU COMPOSE EST ALSSI CALCULE.

224PROGRAM STEPS
ERNEST CH GEHRET
CH - GLAND

75000D 67-PSICROMETRO/UMIDITA' RELATIVA

DATE LE TEMPERATURE DEI TERMOMETRI A BULBO, UNO SECCO E L'ALTRO UMIDO, E LA PRESSIONE BAROMETRICA, IL PROGRAMMA CALCOLA:
1-LA TENSIONE DI VAPORE EFFETTIVA, IN MILLIBAR
2-LA TENSIONE DI VAPORE A SATURAZIONE
3-L'UMIDITA RELATIVA IN PERCENTO
4-IL CONTENUTO IN GRAMMI D'ACQU PER M3 D'ARIA NELLA PROVA
5-IL PUNTO DI RUGIADA IN GRADI CELSIUS

053PROGRAM STEPS
ARRIGO BOEHM
I - TORINO

75001D 67-CAPITALIZZAZIONE SEMPLICE - SCONTO - CALENDARIO

NOTI TRE DEI SEGUENTI DATI:CAPITALE INIZIALE, CAP. FINALE (O MONTANTE), TASSO ANNUO PERCENTUALE, DURATA DELL'OPERAZIONE FINANZIARIA (ANNO COMMERCIALE O ANNO CIVILE), IL PROGRAMMA DETERMINA IL VALORE INCOGNITO. INOLTRE E POSSIBILE EFFETTUARE CALCOLI (DIRETTI O INVERSI) SULLO SCONTO COMMERCIALE E SULLO SCONTO RAZIONALE, E DETERMINAZIONI DI NUMERO DI GIORNI TRA DATE RELATIVE AD ANNI NON BISESTILI.

216PROGRAM STEPS
GIANCARLO CORDONI
I - MONTEBELLUNA

75002D 67-LASTRE PIANE RETTANGOLARI E QUADRATE SOGGETTE A CARICO UNIFORME 3

QUESTO PROGRAMMA CALCOLA CON IL METODO APPROSSIMATO DI MARCUS I MOMENTI FLETTENTI IN UN PUNTO CENTRALE O, IL MOMENTO DI INCASTRO ED IL MOMENTO TORCENTE IN UN PUNTO S DI UNA LASTRA PIANA APPOGGIATA SU 3 LATI ED INCASTRATA SUL LATO CORTO E DI UNA LASTRA PIANA APPOGGIATA SUI DUE LATI LUNGHI ED INCASTRATA SUI LATI CORTI.

200PROGRAM STEPS
MUSA ARNALDO
I - SESTO S GIOVANNI

75003D 67-LASTRE PIANE RETTANGOLARI E QUADRATE SOGGETTE A CARICO UNIFORME 4

QUESTO PROGRAMMA CALCOLA CON IL METODO APPROSSIMATO DI MARCUS I MOMENTI FLETTENTI IN UN PUNTO CENTRALE O ED I MOMENTI DI INCASTRO DI UNA LASTRA INCASTRATA SUI LATI LUNGHI, APPOGGIATA SUI LATI CORTI, I MOMENTI FLETTENTI CENTRALI IN UN PUNTO O, I MOMENTI DI INCASTRO ED IL MOMENTO TORCENTE IN UN PUNTO S DI UNA LASTRA INCASTRATA SU 3 LATI, APPOGGIATA SU UN LATO CORTO.

224PROGRAM STEPS
MUSA ARNALDO
I - SESTO S GIOVANNI

75004D 67-LASTRE PIANE RETTANGOLARI E QUADRATE SOGGETTE A CARICO UNIFORME 2

QUESTO PROGRAMMA CALCOLA CON IL METODO APPROSSIMATO DI MARCUS I MOMENTI FLETTENTI IN UN PUNTO CENTRALE O ED IL MOMENTO DI INCASTRO DI UNA LASTRA APPOGGIATA SU 3 LATI INCASTRATA LUNGO IL LATO MAGGIORE, I MOMENTI FLETTENTI IN UN PUNTO CENTRALE O, I MOMENTI DI INCASTRO ED IL MOMENTO TORCENTE IN UN PUNTO S DI UNA LASTRA APPOGGIATA SU DUE LATI ADIACENTI, INCASTRATA LUNGO GLI ALTRI DUE.

209PROGRAM STEPS
MUSA ARNALDO
I - SESTO S GIOVANNI

75005D 67-LASTRE PIANE RETTANGOLARI E QUADRATE SOGGETTE A CARICO UNIFORME 1

75005D (CONTD)

QUESTO PROGRAMMA CALCOLA CON IL METODO APPROSSIMATO DI MARCUS I MOMENTI FLETTENTI IN UN PUNTO CENTRALE O ED IL MOMENTO TORCENTE AGLI ANGOLI S DI UNA LASTRA APPOGGIATA SUL CONTORNO, I MOMENTI CENTRALI IN UN PUNTO O, I MOMENTI DI INCASTRO ED IL MOMENTO TORCENTE IN UN PUNTO S DI UNA LASTRA INCASTRATA SUL CONTORNO.

169PROGRAM STEPS
MUSA ARNALDO
I - SESTO S GIOVANNI

75006D 97-ISOLAMENTO TERMICO: CALCOLO E VERIFICA (LEGGE 373/76)

QUESTO PROGRAMMA CALCOLA IL FATTORE DI FORMA, IL COEFFICIENTE DI DISPERSIONE TERMICA, IL COEFFICIENTE VOLUMICO GLOBALE, LA POTENZA DELL' IMPIANTO ED IL CONSUMO SPECIFICO DI UN EDIFICIO DI CIVILE ABITAZIONE SECONDO LA LEGGE N. 373 DEL 30.4.76 CALCOLA INOLTRE LE VARIE TRAMITTANZE UNITARIE (KI) DELLE PARETI E VERIFICA CHE IL COEFFICIENTE DI DISPERSIONE TERMICA (CD*) DELL' INTERO EDIFICIO E DI OGNI SINGOLO AMBIENTE (C*DL) SIA MINORE DI QUELLO AMMESSO PER LEGGE.

222PROGRAM STEPS
FRANCESCO MARAZITI
I - PERUGIA

75007D 67-AMMORTAMENTO FRANCESE

NOTI TRE DEI QUATTRO ELEMENTI DI UN AMMORTAMENTO A RATE COSTANTI POSTICIPATE (RATA,VALORE DEL PRESTITO ALL'INIZIO DELL'OPERAZIONE, NUMERO DEI VERSAMENTI COSTANTI E TASSO D' INTERESSE), IL PROGRAMMA CALCOLA IL QUARTO VALORE INCOGNITO, LA QUOTA DI CAPITALE, LA QUOTA-INTERESSI, IL DEBITO RESIDUO E QUELLO ESTINTO ALL ATTO DI QUALUNQUE VERSAMENTO, IL TOTALE DEGLI INTERESSI CORRISPOSTI, E,SEQUENZIALMENTE E AUTOMATICAMENTE L'INTERO PIANO D'AMMORTAMENTO (USABILE ANCHE CON L'HP-97).

210PROGRAM STEPS
GIANCARLO CORDONI
I - MONTEBELLUNA

75008D 67-FRAGILITA OSMOTICA ERITROCITARIA

QUESTO PROGRAMMA E LA VERSIONE IN ITALIANO DEL PROGRAMMA 60047 D DEL CATALOGO STANDARD.
CALCOLA LA PERCENTUALE DI EMOLISI PER TESTS DI FRAGILITA OSMOTICA ERITROCITARIA A TEMPERATURA 20 GRA. PM 7,4, INCUBAZIONE 30 MIN. PARTENDO DAI VALORI DI O.D.

213PROGRAM STEPS
MAURO FELLA
I - GENOVA

75009D 97-REGRESSIONE MULTIPLA PER 3 VARIABILI INDIPENDENTI

QUESTO PROGRAMMA CALCOLA, PER UN GRUPPO DI-N-PUNTI (3 VARIABILI INDIPENDENTI), L'EQUAZIONE LINEARE NELLA FORMA: Z=AX+BY+CM+K
IL COEFFICIENTE DI CORRELAZIONE-R-
E LA VARIANZA RESIDUA-S**2R-

433PROGRAM STEPS
GIANNI ANGELINI
I - TRENTO

75010D 97-BRIDGE . TORNEI MITCHELL TAVOLI DISPARI . PUNTEGGI FINALI

NEI TORNEI MITCHELL CON NUMERO DISPARI DI TAVOLI (DA 11 A 19), QUINDI CON ALTRETTANTO NUMERO (O MULTIPLO) DI SCORES DI 10 TURNI CIASCUNO,DOPO AVER SEGNATO SUGLI SCORES I PUNTI NS, CON QUESTO PROGRAMMA, VELOCEMENTE E SEMPLICEMENTE

75010D (CONTD)

SI VERIFICA LA SOMMA (=90) E SI ASSEGNANO I PUNTI ALLE SINGOLE COPPIE NS ED EO. AL TERMINE SI HA UN ELENCO ORDINATO DEI PUNTI TOTALI DI CIASCUNA COPPIA E RELATIVA PERCENTUALE.

221PROGRAM STEPS
MARIO RIPESI
I - SALERNO

75011D 97-BRIDGE . TORNEI MITCHELL 18 TAVOLI . PUNTEGGI FINALI

NEI TORNEI MITCHELL DI 18 TAVOLI, QUINDI CON 18 (O MULTIPLO DI 18) SCORES DI 10 TURNI CIASCUNO, DOPO AVER SEGNATO SUGLI SCORES I PUNTI NS,CON QUESTO PROGRAMMA,VELOCEMENTE E SEMPLICEMENTE, SI VERIFICA LA SOMMA (=90) E SI ASSEGNANO I PUNTI ALLE SINGOLE COPPIE NS ED EO. AL TERMINE SI HA UN ELENCO ORDINATO DEI PUNTI TOTALI DI CIASCUNA COPPIA E RELATIVA PERCENTUALE.

222PROGRAM STEPS
MARIO RIPESI
I - SALERNO

75012D 97-BRIDGE . TORNEI MITCHELL 16 TAVOLI . PUNTEGGI FINALI

NEI TORNEI MITCHELL DI 16 TAVOLI, QUINDI CON 16 (O MULTIPLO DI 16) SCORES DI 10 TURNI CIASCUNO, DOPO AVER SEGNATO SUGLI SCORES I PUNTI NS,CON QUESTO PROGRAMMA,VELOCEMENTE E SEMPLICEMENTE, SI VERIFICA LA SOMMA (=90) E SI ASSEGNANO I PUNTI ALLE SINGOLE COPPIE NS ED EO. AL TERMINE SI HA UN ELENCO ORDINATO DEI PUNTI TOTALI DI CIASCUNA COPPIA E RELATIVA PERCENTUALE.

222PROGRAM STEPS
MARIO RIPESI
I - SALERNO

75013D 97-BRIDGE . TORNEI MITCHELL 14 TAVOLI . PUNTEGGI FINALI

NEI TORNEI MITCHELL DI 14 TAVOLI, QUINDI CON 14 (O MULTIPLO DI 14) SCORES DI 10 TURNI CIASCUNO, DOPO AVER SEGNATO SUGLI SCORES I PUNTI NS,CON QUESTO PROGRAMMA,VELOCEMENTE E SEMPLICEMENTE, SI VERIFICA LA SOMMA (=90) E SI ASSEGNANO I PUNTI ALLE SINGOLE COPPIE NS ED EO. AL TERMINE SI HA UN ELENCO ORDINATO DEI PUNTI TOTALI DI CIASCUNA COPPIA E RELATIVA PERCENTUALE.

222PROGRAM STEPS
MARIO RIPESI
I - SALERNO

75014D 97-BRIDGE . TORNEI MITCHELL 12 TAVOLI . PUNTEGGI FINALI

NEI TORNEI MITCHELL DI 12 TAVOLI, QUINDI CON 12 (O MULTIPLO DI 12) SCORES DI 10 TURNI CIASCUNO, DOPO AVER SEGNATO SUGLI SCORES I PUNTI NS,CON QUESTO PROGRAMMA,VELOCEMENTE E SEMPLICEMENTE,SI VERIFICA LA SOMMA (=90) E SI ASSEGNANO I PUNTI ALLE SINGOLE COPPIE NS ED EO. AL TERMINE SI HA UN ELENCO ORDINATO DEI PUNTI TOTALI DI CIASCUNA COPPIA E RELATIVA PERCENTUALE.

222PROGRAM STEPS
MARIO RIPESI
I - SALERNO

75015D 67-97-LISTA DI PRIMI

A PATIRE DA N=30K+1,7,11,13,17,19, 23,29 (CON 7<=N<7*10**9), IL PROGRAMMA DETERMINA I NUMERI PRIMI P>N CHE POSSONO ESSERE MEMORIZZATI SULL HP-67 IN 20 REGISTRI AUTOMATICAMENTE, OPPURE STAMPATI SEQUENZIALMENTE SULL'HP-97. UN PARTICOLARE PROCEDIMENTO EVITA L'ESAME DI TUTTI I NUMERI DISPARI CONSECUTIVI, CON CON-

75015D (CONTD)

SEGUENTE RISPARMIO DI TEMPO.
(AD ES. N=200003 RISULTA PRIMO IN
1 MIN. E 14 SEC. CIRCA)

224PROGRAM STEPS
GIANCARLO CORDONI
I - MONTEBELLUNA

75016D 67-CONVERSIONE DA DBM A POTENZA O TENSIONE E VICEVERSA

IL PROGRAMMA PERMETTE DI CONVERTIRE QUALSIASI VALORE DI DBM NEL CORRISPONDENTE VALORE DI POTENZA (W) O DI TENSIONE (V), SULLE IMPEDENZE: 50; 75; 93; 150; 300; 600 OHM, E VICEVERSA.

058PROGRAM STEPS
GAETANO VIOLANTE
I - MURAVERA

75017D 67-ANALISI FINANZIARIA CONTRATTUALE

IL PROGRAMMA CALCOLA LA DIFFERNEZA DI ONERI FINANZIARI FRA DUE FORMULE ALTERNATIVE DI PAGAMENTO RELATIVE AD UN CONTRATTO DI FORNITURA.

172PROGRAM STEPS
VINCENZO MAUGERI
I - ROMA

75018D 67-PROSPETTIVE DISEGNATE PER PUNTI

QUESTO PROGRAMMA CONSENTE DI DISEGNARE PER PUNTI SECONDO UN PROCEDIMENTO RIGOROSO LA PROSPETTIVA DI UN OGGETTO DI QUALSIASI FORMA E COLLOCATO IN QUALSIASI POSIZIONE.

069PROGRAM STEPS
MUSA ARNALDO
I - SESTO S GIOVANNI

75019D 97-FOGNATURE-CALCOLO PORTATA TUBI CIRCOLARI

IL PROGRAMMA CALCOLA VELOCITA DELL' ACQUA E PORTATA IN TUBI CIRCOLARI RIEMPITI PARZIALMENT, UTILIZZANDO LE FORMULE DI CHEZY E DI KUTTER.

126PROGRAM STEPS
PAOLO FILIPPI
I - VALDAGNO

75020D 97-FOGNATURE-CALCOLO PORTATA SEZIONI RETTANGOLARI

IL PROGRAMMA CALCOLA VELOCITA DELL' ACQUA E PORTATA IN CANALI RETTANGOLARI, UTILIZZANDO LE FORMULE DI CHEZY E DI KUTTER.

061PROGRAM STEPS
PAOLO FILIPPI
I - VALDAGNO

80000D 67-BRIDG-IT

SE JUEGA SOBRE UN TABLERO CON FILAS DE CIRCULOS NEGROS ALTERNADOS CON CIRCULOS BLANCOS. ALTERNATIVAMENTE CADA JUGADOR UNE CON UN TRAZO DOS CIRCULOS ADYACENTES DE SU COLOR SIN CRUZAR TRAZOS DE SU OPONENTE. GANA EL PRIMERO EN HACER UN CAMINO CONEXO DES DE LA BASE A LA META. NEGRAS JUEGAN DE ABAJO ARRIBA. BLANCAS DE IZQUIERDA A DERECHA.

057PROGRAM STEPS
FRANCISCO HERRERO RUIZ
E - MADRID

80001D 67-EL BUSCADOR, EL TESORO Y EL MONSTRUO

OCULTO EN UNA SELVA 10X10 SE ENCUENTRA UN TESORO QUE VD, COMO BUSCADOR, DEBE HALLAR, CUIDANDO DE NO PISAR NINGUNA DE LAS 1 A 3 MINAS SITUADAS CERCA DE EL. TAMBIEN HAY UN MONSTRUO QUE SE DIRIGE HACIA VD. PARA DEVORARLE. VD. CONOCE LA DISTANCIA QUE LE SEPARA EN TODO MOMENTO DEL MONST. Y DEL TESORO, PERO NO SU SITUACION,Y DISPONE DE UN DETECTOR DE MINAS, Y DE 1 ARMA DE 1 SOLO DISPARO. SI HIERE AL MONST. ESTE SE TRASLADA A OTRO LUGAR Y PROSIGUE SU CACERIA.TODO TERMINA CON EL HALLAZGO DEL TESORO O CON SU DESTRUCCION.

220PROGRAM STEPS
VALENTIN ALBILLO
E - MADRID

80002D 67-GUES-IT

JUEGO INVENTADO POR R. ISAACS. DOS JUGADORES SE REPARTEN 11 CARTAS, 5 A CADA UNO Y UNA SE DEJA OCULTA. EN CADA TURNO CADA JUGADOR OPTA POR DECLARAR LA CARTA OCULTA (GANA SI ACIERTA) O BIEN PREGUNTA AL OPONENTE SI POSEE CIERTA CARTA. SE DEBE CONTESTAR LA VERDAD. PERO SE PUEDE PREGUNTAR POR UNA CARTA QUE SE POSEA (CONENGANO O "FAROL") O NO PARA DESPISTAR AL CONTRARIO.

372PROGRAM STEPS
FRANSISCO HERRERO RUIZ
E - MADRID

80003D 67-ANALISIS DE INVERSIONES TABLAS DE AMORTIZACION

DADA UNA SERIE DE HASTA 21 FLUJOS DE CAJA IRREGULARES, EL PROGRAMA CALCULA SU VALOR ACTUAL NETO (NPV) DESCONTANDO LOS FLUJOS SEGUN UNA TASA DADA I%. TAMBIEN ES POSIBLE Y CALCULAR LA TASA DE RENDIMIENTO INTERNO IRR, Y TRAZAR LA CURVA DEL PERFIL DE VALOR ACTUAL PVA. ES POSIBLE GENERAR UNA TABLA DE AMORTIZACION DE UN PRESTAMO ENTRE DOS PERIODOS DADOS, MOSTRANDO PARA CADA PERIODO LA PARTE CORRESP. AL INTERES, LA CORRESP. AL CAPITAL,Y EL SALDO PENDIENTE, Y SUS TOTALES CORRESPONDIENTES. 11 PAG. DOCUMENT.

215PROGRAM STEPS
VALENTIN ALBILLO
E - MADRID

80004D 67-CURVAS DE REGRESION

DADA UNA SERIE DE DATOS (X,Y) EL PROGRAMA PERMITE EL CALCULO EN CUALQUIER ORDEN DE UNO O VARIOS TIPOS DE REGRESION (LINEAL,POTENCIAL, LOGARITMICA O EXPONENCIAL) SIN NECESIDAD DE REINTRODUCIR DATOS. ADEMAS DE LOS PARAMETROS A,B,Y EL COEFIC. DE CORREL. R**2, ES POSIBLE EFECTUAR PREDICCIONES TANTO DE Y COMO DE X,BASADAS EN EL ULTIMO TIPO DE REGRESION CALCULADO. CORREGIR ERRORES Y ANADIR O SUPRIMIR DATOS ES POSIBLE EN CUALQUIER MOMENTO. NO SON PRECISAS TARJENTAS DE DATOS. EJEMP.DE APLIC. DADOS. - 7 PAGIN.

224PROGRAM STEPS
VALENTIN ALBILLO

80004D (CONTD)

E - MADRID

80005D 67-DETERMINACION DEL GRUPO PUNTUAL DE UNA MOLECULA

HAY QUE CONTESTAR SI (1) O NO (0) A LAS PREGUNTAS DE LA CALCULADORA: TIENE LA MOLECULA EL ELEMENTO DE SIMETRIA R? LA RESPUESTA FINAL: "GRUPO PUNTUAL DE SIMETRIA" SE RECONOCE POR EL CENTELLEO DEL PUNTO DECIMAL. PARA PODER ESTABLECER EL "DIALOGO" SE DEFINE UNA EQUIVALENCIA ENTRE EL LENGUAJE NUMERICO DE LA CALCULADORA Y EL LENGUAJE DE SCHOENFLIES.

224PROGRAM STEPS
WALTER GAETE
E - SABADELL

80006D 67-EL JUEGO DE LOS BARQUITOS

EN UN MAR 10X10 (O 20X10,A ELECCION) LA CALC. ESCONDE AL AZAR UN CIERTO NUMERO DE BARCOS DE DISTINTOS TAMANOS DE FORMA QUE NO ESTEN ADYACENTES ENTRE SI,NI EN DIAGONAL. EL JUGADOR TRATARA DE HUNDIRLOS EN UN MINIMO DE JUGADAS, DISPARANDO A DETERMINADOS SECTORES. HP INDICA SI UN BARCO FUE ALCANZADO O NO,Y QUE CLASE DE BARCO ES, O, EN CASO, DE FALLO,SI HAY BARCOS CERCA,Y CUANTOS HAY. POSIBILIDAD DE ELEGIR ENTRE 1 O 2 FLOTAS STANDARD (10 BARCOS),O ELEGIR UNO MISMO EL NUMERO Y TAMANO DE CADA BARCO.11 PAGIN. MECANOGRAP.

224PROGRAM STEPS
VALENTIN ALBILLO
E - MADRID

80007D 67-PLANO DE LOS MINIMOS CUADRADOS A TRAVES DE N PUNTOS

ESTE PROGRAMA, DE INTERES ESPECIALMENTE PARA QUIMICOS QUE TRABAJAN EN ESTRUCTURAS MOLECULARES Y CRISTALINAS, ENCUENTRA EL MEJOR PLANO (METODO DE LOS MINIMOS CUADRADOS) QUE PASA POR N PUNTOS (ATOMOS) DE COORDENADAS X,Y,Z. UNA VEZ ENCONTRADA LA ECUACION NORMALIZADA AX+BY+CZ+D=0, EL PROGRAMA PERMITE TAMBIEN ENCONTRAR LA DISTANCIA AL PLANO DE CUALQUIER PUNTO (ATOMO).

185PROGRAM STEPS
WALTER GAETE
E - SABADELL

80008D 67-REPRESENTACIONES REDUCIBLES USANDO 3N COORD/O 3N-6 VIBRAC.

EL PROGRAMA ENCUENTRA EL CARACTER DE LA MATRIZ QUE CORRESPONDE A UN ELEMENTO DE SIMETRIA ACTUANDO SOBRE UNA MOLECULA DE N ATOMOS, SI SE USAN COMO VECTORES BASES LAS 3N COORDENADAS DE TODOS LOS ATOMOS O LAS 3N-6 VIBRACIONES (MOLECULAS NO LINEALES).

057PROGRAM STEPS
WALTER GAETE
E - SABADELL

PROGRAM ABSTRACTS

90000D 67-COULOMETRIE

WISSELOPLOSSINGEN PROGRAMMA. BEREKENT DE ONBEKENDE PARAMETER UIT DE KENNIS VAN DE 4 ANDERE. PARAMETERS ZIJN:G (GEVORMD MATER),M (AT/MOLEKMASSA), I (STROOMST), T (TIJD) EN N (AANT ELEKTR). VOLGORDE VAN INVOER IS VOLKOMEN WILLEKEURIG EN OP ELK GEWENST MOMENT KAN 1 OF MEERDERE VD PARAM GEWIJZIGD WORDEN.

086PROGRAM STEPS
JOHAN DECAT
B - GENT

90001D 67-IQ/TEST

ALS U UW NUMERIEK INZICHT WILT TOETSEN IS DIT HET IDEALE PROGRAMMA DE CALCULATOR GENEREERT EEN REEKS GETALLEN, EN HET IS UW TAAK DE REGELMAAT TE VINDEN EN DE DRIE VOLGENDE TERMEN TE BEREKENEN. HET PROGRAMMA HEEFT VIJF MOEILIJKHEIDSGRADEN: VAN 0 (ERG EENVOUDIG) TOT 4 (BIJNA ONMOGELIJK OP TE LOSSEN).

224PROGRAM STEPS
ARIE VAN ERK
NL - EINDHOVEN

90002D 97-MOLLIER DIAGRAMMA (X,I)

UITGAANDE VAN DE TEMPERATUUR, DRUK EN RELATIEVE VOCHTIGHEID VAN DE LUCHT KUNNEN DE ABSOLUTE VOCHTIGHEID, DICHTHEID, ENTALPIE EN DAUWPUNT VAN VOCHTIGE LUCHT BEREKEND WORDEN. VERVOLGENS KUNNEN INGEVOEGDE TEMPERATUURSVERANDERING (OPWARMING EN/OF AFKOELING) TELKENS DE OVEREENKOMSTIGE WAARDEN DER TOESTANDSGROOTHEDEN BEREKEND WORDEN

224PROGRAM STEPS
ROBERT F J VAN DAMME
B - TIENEN

90003D 67-OMREKENINGSTABEL VOOR FILTERS

PROGRAMMA REKENT DE ENE FILTERWAARDE OM IN DE ANDERE VOOR VERSCHILLENDE TYPES FILTERS. (O.A. DURST, WALLNER, KODAK, CIBA-ILFORD, UNICOLOR, SIMMARD, CHROMEGA, AGFA, WENZEL). INVOER: FILTERWAARDE 1, UITVOER: ECHTE FILTERWAARDE 2, AFGERONDE FILTERWARDE 2 (= DE GEBRUIKELIJKE).

043PROGRAM STEPS
JOHAN DECAT
B - GENT

90004D 67-FILTERTABEL 1

PROGRAMMA BEREKENT DE NIEUWE BELICHTINGSTIJD BIJ VERANDERING VAN FILTERING MET EEN DURSTKLEURENKOP.

056PROGRAM STEPS
JOHAN DECAT
B - GENT

90005D 67-FILTERTABEL 2

PROGRAMMA BEREKENT DE NIEUWE BELICHTINGSTIJD BIJ VERANDERING VAN FILTERING BIJ GEBRUIK VAN FILTERSETS VAN CIBA-ILFORD, KODAK, UNICOLOR, SIMMARD

066PROGRAM STEPS
JOHAN DECAT
B - GENT

90006D 67-FILTERTABEL 3

PROGRAMMA BEREKENT DE NIEUWE BELICHTINGSTIJD BIJ VERANDERING VAN FILTERING BIJ GEBRUIK VAN AGFACOLOR FILTERFOLIE SETS.

067PROGRAM STEPS
JOHAN DECAT
B - GENT

90007D 67-UKJENTE AV 3X3M 2X2M OG 2E

REGNER UT DE UKJENTE VERDIER AV: LIGNINGER MED 3 UKJENTE (3X3M), LIGNINGER MED 2 UKJENTE (2X2M) OG ANNENGRADSLIGNING (2E). DET ER MULIGHETER TIL A RETTE APP (3X3M) OG (2X2M) UNDER INNMATNINGEN. INMATNINGEN AV (3X3M) OG (2X2M) VISES AUTOMATISK.

224PROGRAM STEPS
HELGE RINGAS
N - PORSGRUNN

90008D 67-KONVERTERING MELLAN BAGMATTOCH TIDMATT

PROGRAMMET KONVERTERAR BAGMATT TILL TIDMATT ELLER VICE VERSA. DET KAN ANVAENDAS SEPARAT ELLER, EFTER EV. OMSTUVNING AV LABELS OCH REGISTER, T EX INGA SASOM EN DEL AV ETT ASTRONOMISKT NAVIGATIONSPROGRAM.

097PROGRAM STEPS
OLOF FRISK
S - HANDEN

90009D 67-BERAEKNING AV KONTROLLSIFFRA I DET SVENSKA PERSONNUMRET

PROGRAMMET BERAEKNAR KONTROLLSIFFRAN I PERSONNUMRET, SOM AER TILLDELAT VARJE SVENSK MEDBORGARE. HAERVID ANVAENDS DEN S K MODULUS-10 METODEN.

088PROGRAM STEPS
OLOF FRISK
S - HANDEN

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