

FORTRAN PROGRAM

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C      MATRIX INVERSION ORDER 5
      FREQUENCY 6(2,1,2)
      DIMENSION A(5,5)
      DO 1 I = 1, 5
      DO 1 J = 1, 5
1     A(I,J) = 1.0/FLOAT(I+J-1)
      DO 5 K = 1, 5
      D = A(K,K)
      A(K,K) = 1.0
      DO 2 J = 1, 5
2     A(K,J) = A(K,J)/D
      DO 5 I = 1, 5
6     IF (I-K) 3,5,3
3     D = A(I,K)
      A(I,K) = 0.0
      DO 4 J = 1, 5
→    4 A(I,J) = A(I,J) - D * A(K,J)
5     CONTINUE
      DO 246 I = 1,5
      DO 246 J = 1,5
246   PRINT 247,I, J, A(I,J)
247   FORMAT (3H A(I2,1H,I2,4H) = F10.1,I1)
           S       T       O       P

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RESULTING MACHINE-LEVEL PROGRAM

3A	LXD 2),4 SXD C)100,4 LXD 2),2 SXD C)201,2 PXD 0,2 STO I
4A	LXD 2),1 PXD 0,1 STO J
5A	CLA I ADD J SUB 2) LRS 18 ORA 6) FAD 6) STO 1)+1 CLA 3) FDP 1)+1 STQ A+1,4
5A1	TXI *+1,4,5 TXI *+1,1,1 SXD J,1
5A2	TXL 5A,1,5
5A3	TIX 5A3+1,4,25
5A4	TXI *+1,4,K TXI *+1,2,1 SXD I,2
5A5	TXL 4A,2,5
6A	LXD 2),1 SXD C)102,1 LXD 2),4 SXD C)103,4 LXD 2),2 SXD C)203,2 LXD 2),1 SXD C)101,1 LXD 2),4 SXD C)204,4 PXD 0,4 STO K
7A	CLA A+1,1 STO D
8A	CLA 3) STO A+1,1
9A	BSS
10A	CLA A+1,2 FDP D STQ A+1,2
10A1	TXI *+1,2,5
10A2	TXL 10A,2,25
10A3	TIX 10A3+1,2,25 SXD C)203,2
11A	LXD 2),4 SXD C)100,4

LX D 2),4
 S X D C)202,4
 P X D 0,4
 S T O I
 D)708 LX D C)103,4
 D)308 LX D C)202,2
 D)108 LX D C)102,1
 12A CLA I
 SUB K
 12A1 T Z F F)C
 13A CLA A+1,4
 S T O D
 14A CLA 3)+1
 S T O A+1,4
 15A B S S
 D)20A LX D C)100,2
 16A L D Q D
 F M P A+1,1
 C H S
 F A D A+1,2
 S T O A+1,2
 16A1 T X I *+1,2,5
 T X I *+1,1,5
 16A2 T X L 16A,2,25
 16A3 T I X 16A3+1,2,25
 T I X *+1,1,25
 T R A 17A
 E)C S X D C)103,4
 S X D C)102,1
 D)20C LX D C)100,2
 17A B S S
 17A1 T X I *+1,2,1
 S X D C)100,2
 T X I *+1,4,1
 L X D C)202,2
 T X I *+1,2,1
 S X D C)202,2
 S X D I,2
 17A2 T X L 12A,2,5
 F)D S X D C)103,4
 17A4 T X I *+1,1,1
 S X D C)102,1
 L X D C)203,2
 T X I *+1,2,1
 L X D C)101,1
 T X I *+1,1,6
 S X D C)101,1
 L X D C)204,4
 T X I *+1,4,1
 S X D C)204,4
 S X D K,4
 17A5 T X L 7A,4,5
 18A L X D 2),4
 L X D 2),2
 P X D 0,2

19A STO I
 LXD 2).1
 PXD 0,1
 STO J
 20A CAL *
 XIT (LEV)
 ETM
 CAL (BDC)
 SLW 1
 CAL (SPH)
 20D1 NTR 8)7N
 21A ETM
 NTR I
 NTR J
 NTR A+1,4
 LTM
 22A CAL *
 XIT (FIL)
 22A1 TXI *+1,4,5
 TXI *+1,1,1
 SXD J,1
 22A2 TXL 20A,1,5
 22A3 TIX 22A3+1,4,25
 22A4 TXI *+1,4,1
 TXI *+1,2,1
 SXD 1,2
 22A5 TXL 19A,2,5
 24A HPR
 TRA 24A
 2) OCT +000001000000
 3) OCT +201400000000
 OCT +000000000000
 6) OCT +233000000000
 OCT +000000077777
 OCT +000000000000
 OCT +000001000000
 OCT +000000000000
 8)7N BCD 1 (3H A
 BCD 1(I2,1H
 BCD 1,I2,4H
 BCD 1) = F1
 BCD 10.1,11
 BCD 1)
 OCT -377777777777

SOLUTION OF PROBLEM

A(1, 1) = 25.0
A(1, 2) = -300.0
A(1, 3) = 1050.1
A(1, 4) = -1400.2
A(1, 5) = 630.1
A(2, 1) = -300.0
A(2, 2) = 4800.5
A(2, 3) = -18902.0
A(2, 4) = 26883.0
A(2, 5) = -12601.5
A(3, 1) = 1050.1
A(3, 2) = -18902.0
A(3, 3) = 79388.7
A(3, 4) = -117613.1
A(3, 5) = 56706.4
A(4, 1) = -1400.2
A(4, 2) = 26883.1
A(4, 3) = -117613.1
A(4, 4) = 179219.8
A(4, 5) = -88209.7
A(5, 1) = 630.1
A(5, 2) = -12601.5
A(5, 3) = 56706.4
A(5, 4) = -88209.7
A(5, 5) = 44104.7

STORAGE FOR VARIABLES APPEARING IN DIMENSION OR EQUIVALENCE SENTENCES

DEC	OCT	DEC	OCT	DEC	OCT	DEC	OCT	DEC	OCT
A	32767 77777								

STORAGE FOR VARIABLES WHICH DO NOT APPEAR IN DIMENSION OR EQUIVALENCE SENTENCES

DEC	OCT	DEC	OCT	DEC	OCT	DEC	OCT	DEC	OCT
I	32742 77746	D	32741 77745	J	32740 77744	K	32739 77743		

EXTERNAL FORMULA NUMBERS WITH CORRESPONDING INTERNAL FORMULA NUMBERS AND OCTAL LOCATIONS

EFN	IFN	LOC	EFN	IFN	LOC	EFN	IFN	LOC	EFN	IFN	LOC	EFN	IFN	LOC
1	5	00011	2	10	00054	6	12	00074	3	13	00077	4	16	00104
5	17	00122	246	20	00156	246	22	00172	247	23	00000			

SUBROUTINES OBTAINED FROM LIBRARY

(BDC)	DEC	OCT	(FIL)	DEC	OCT	(LEV)	DEC	OCT	(SPH)	DEC	OCT	DEC	OCT
	150	00226		180	00264		193	00301		700	01274		