

ZER	SA6 X3+B2 STORE IN A6,ZERO Q-TABLE	DEQ
	SB2 B2-1 INCREMENTED	DEQ
	PL B2,ZER	DEQ
NEXT	SX7 B3 SAVE B3 IN TB3	DEQ
	SA7 TB3 RESPECTIVELY	DEQ
	SA2 A0+X OBTAIN ADDRESS OF X	DEQ
	SB1 X2	DEQ
	SA2 A0+N OBTAIN ADDRESS OF N	DEQ
	SB2 X2	DEQ
	SA2 A0+Y OBTAIN ADDRESS OF Y TABLE	DEQ
	SB3 X2	DEQ
	SA2 A0+YP OBTAIN ADDRESS OF YP TABLE	DEQ
	SB4 X2	DEQ
CALL	RJ CALL	DEQ
+	JP NORMA	DEQ
+	RJ ERROR	DEQ
	BSS 2	DEQ
NORMA	SA2 TB3 RESET B3	DEQ
	SB3 X2	DEQ
	SB2 1 SET B2=1 FOR EXIT TEST	DEQ
	GE B2,B3,DEQ1	DEQ
DEQ2	SA1 DEQ1	DEQ
	LX1 30	DEQ
	SA0 X1	DEQ
	SA1 A0+N	DEQ
	SA2 X1 SET B7 TO N	DEQ
	SB7 X2	DEQ
	SB5 0 , B5 CONTROLS J	DEQ
	SA2 A0+Q OBTAIN ADDRESS OF ADDRESS OF Q TABLE	DEQ
	SA3 A0+YP OBTAIN ADDRESS OF ADDRESS OF YP TABLE	DEQ
	SA5 A0+Y OBTAIN ADDRESS OF ADDRESS OF Y TABLE	DEQ
	SA3 X3 A3 CONTAINS ADDRESS OF YP TABLE	DEQ
	SA5 X5 A5 CONTAINS ADDRESS OF Y TABLE	DEQ
	SA2 X2 A2 CONTAINS ADDRESS OF Q TABLE	DEQ
NEWI	SB6 B0-B3	DEQ
	SA1 B6+E+5 OBTAIN E(J)	DEQ
	SA4 A2+B5 OBTAIN Q(I)	DEQ
	FX6 X1*X4	DEQ
	SA6 RS RS=E(J)*Q(I)	DEQ
HH	SA1 A0+H OBTAIN ADDRESS OF H	DEQ
YPN	SA4 A3+B5 OBTAIN YP(I)	DEQ
	SA1 X1 OBTAIN H	DEQ
	FX6 X1*X4	DEQ
	SA6 RS+1 RS+1=H*YP(I)	DEQ
	SA4 RS -E SUB J * Q SUB I,J	DEQ
	FX6 X6-X4	DEQ
	NX6 X6,B0 NORMALIZE I,J	DEQ
	SA4 B6+D+5 MULTIPLIED	DEQ
	FX6 X6*X4 D SUB J	DEQ
YN	SA4 A5+B5 OBTAIN Y(I)	DEQ
	FX6 X6+X4 ADD, THEN SUBTRACT TO ADJUST ROUNDED OFF	DEQ
	FX6 X6-X4 ERROR IN R TO ERROR IN Y SUB I,J	DEQ
	SA6 RS EQUALS R SUB I,J+1	DEQ
	FX6 X6+X4 PLUS Y SUB I,J+1	DEQ
	NX6 X6,B0 NORMALIZE	DEQ
	SA6 A4 EQUALS Y SUB I,J+1 C	DEQ
QIJ	SA4 B6+F+5 FSUBJ	DEQ
	SA1 RS+1 TIMES	DEQ
	FX6 X4*X1 K SUB I,4	DEQ
	SA1 RS	DEQ

LEO

```

42/0LLEQ,18/7
0
B1+B0
A1+B0
B0+CALL+1
52B
X3*X2
X7*X6
B0+CALL+1
B2+B0
A2+B0
B0+CALL+2
X3*X2
X7*X6
B0+CALL+2
B3+B0
A2+B0
B0+CALL+3
X3*X2
X7*X6
B0+CALL+3
B4+B0
A2+B0
B0+CALL+4
X3*X2
X7*X6
B0+CALL+4
B5+B0
A2+B0
B0+CALL+5
X3*X2
X7*X6
B0+CALL+5
B6+B0
A2+B0
B0+CALL+6
X3*X2
X7*X6
B0+CALL+6
B0+DET
X2+B0
B0+CALL+7
X3*X2
X7*X6
B0+CALL+7
LEQP
B0+LEQ
6
0
1
2
3
4
5
1
B0+LEQP
36B
X2*A
X3+B0
X4

```

CALL
CALL1

A
B
N
M
IA
IB
LEQP

	SA7	A4+B0	.ADDRESS OF A STAYS IN A7 FOR REST OF LEQ	LEQ
	SA3	X2+B		LEQ
	BX6	X3		LEQ
	SA6	B0+CALL+2		LEQ
	SA3	X2+N		LEQ
	SA4	X3+B0		LEQ
	SB1	X4+B0	.VALUE OF N STAYS IN B1 FOR REST OF LEQ	LEQ
	SA3	X2+M		LEQ
	SA4	X3+B0		LEQ
	BX6	X4		LEQ
	SA6	B0+CALL+4		LEQ
	SA3	X2+IA		LEQ
	SA4	X3+B0		LEQ
	SB7	X4+B0	.VALUE OF IA STAYS IN B7 FOR REST OF LEQ	LEQ
	SA3	X2+IB		LEQ
	SA4	X3+B0		LEQ
	BX6	X4		LEQ
	SA6	B0+CALL+6		LEQ
	SA3	ONE		LEQ
	BX7	X3		LEQ
	MX0	000	.X0,X7 RESERVED,ONLY FOR DETERMINATNS	LEQ
	EQ	B1,B0,ER	.ERROR RETURN IF N=0	LEQ
	SB3	B0+0	.B3=0,1,2,...,N-1 IS ROW COUNTER	LEQ
SET	SA3	A7+B3		LEQ
	PL	X3,R10		LEQ
	BX3	-X3	.ABS(X3) TO X3	LEQ
R10	SB4	B0+1	.B4=1,2,...,N-1 IS COLUMN COUNTER	LEQ
	SA4	A3+B7	.COLUMN1=2ND COLUMN OF ROW B3 TO X4	LEQ
NORM	EQ	B4,B1,A3Q	. IF B4=N THEN ROW B3 IS FINISHED	LEQ
	PL	X4,R11		LEQ
	BX4	-X4		LEQ
R11	FX6	X3-X4		LEQ
	NX6	B0,X6		LEQ
	PL	X6,IA3		LEQ
	BX3	X4		LEQ
IA3	SA4	A4+B7		LEQ
	SB4	B4+1		LEQ
	JP	B0+NORM		LEQ
A3Q	FX2	X3*X7		LEQ
	ZR	X3,SING		LEQ
	OR	X2,SCALE		LEQ
	NZ	X2,ETC		LEQ
SCALE	UX7	B4,X7		LEQ
	PX7	B0,X7		LEQ
	SX2	B4+B0		LEQ
	IX0	X0+X2		LEQ
	FX2	X3*X7		LEQ
ETC	BX7	X2	.DET COMPUTATION UPDATED BY FACTOR FROM ROW	LEQ
	SB6	B0+0	.B6=0,1,...,N-1 IS COLUMN INDEX	LEQ
	SA5	A3+B0	.ADDRESS OF FIRST ELEMENT OF ROW B3 TO A5	LEQ
QUILA	FX6	X5/X3		LEQ
	SA6	A5+B0		LEQ
	SA5	A5+B7		LEQ
	SB6	B6+1		LEQ
	LT	B6,B1,QUILA		LEQ
	SA5	B0+CALL+6		LEQ
	SB2	X5+B0		LEQ
	SA5	B0+CALL+2		LEQ
	SA5	X5+B3		LEQ
	SA4	B0+CALL+4		LEQ

	SB4	X4+B0			LEQ	1
	SB6	B0+B0	,B6=0,1,2,...,M-1 IS COLUMN INDEX		LEQ	1
QUILB	FX6	X5/X3			LEQ	1
	SA6	A5+B0			LEQ	1
	SA5	A5+B2			LEQ	1
	SB6	B6+1			LEQ	1
	LT	B6,B4,QUILB	,END EQUILIBRATION IF B6=M		LEQ	1
	SB3	B3+1			LEQ	1
	LT	B3,B1,SET	, NEXT ROW IF B3 LESS THAN N		LEQ	1
PTF	SB2	B0+1			LEQ	1
	EQ	B2,B1,EXIT			LEQ	1
	SB2	B0+0			LEQ	1
	SA2	A7+B0	,B2 IS THE ROW NUMBER OF THE NEXT DIAGONAL	LEQ	1	
TFORM	SB3	B2+B0	,B3 IS THE ROW NUMBER OF THE LARGEST ELEMENT	LEQ	1	
	SA3	A2+B0	, SO FAR IN COLUMN B2 ON OR BELOW THE DIAGONAL	LEQ	1	
	PL	X3,R12		LEQ	1	
	BX3	-X3		LEQ	1	
R12	SB4	B3+1	,B4 IS THE ROW NUMBER OF THE NEXT ELEMENT	LEQ	1	
	SA4	A3+1	, TO BE COMPARED WITH X3 AND A4 IS ITS ADDR	LEQ	1	
CMPRE	PL	X4,R13		LEQ	1	
	BX4	-X4		LEQ	1	
R13	FX6	X4-X3		LEQ	1	
	ZR	X6,CMP1		LEQ	1	
	NG	X6,CMP1		LEQ	1	
	SA3	A4+B0		LEQ	1	
	BX3	X4		LEQ	1	
	SB3	B4+B0		LEQ	1	
CMP1	SB4	B4+1		LEQ	1	
	SA4	A4+1		LEQ	1	
	LT	B4,B1,CMPRE		LEQ	1	
	ZR	X3,SING		LEQ	1	
	SA3	A3+B0		LEQ	1	
	FX2	X3*X7		LEQ	1	
	OR	X2,SCL		LEQ	1	
	NZ	X2,EC		LEQ	1	
SCL	UX7	B4,X7		LEQ	1	
	PX7	B0,X7		LEQ	1	
	SX2	B4+B0		LEQ	1	
	IX0	X0+X2		LEQ	1	
	FX2	X3*X7		LEQ	1	
EC	BX7	X2		LEQ	1	
	EQ	B3,B2,T	,NO PIVOTING IF B3=B2,OTHERWISE EXCHANGE ROW	LEQ	1	
	BX7	-X7	,INTERCHANGE ROWS,DET=-DET	LEQ	1	
	SB4	B2+B0	,B4=B2,...,N-1,B4 IS COLUMN INDEX	LEQ	1	
	SA4	A2+B0		LEQ	1	
	SA5	A3+B0		LEQ	1	
R02	BX6	X4		LEQ	1	
	SA6	A5+B0		LEQ	1	
	BX6	X5		LEQ	1	
	SA6	A4+B0		LEQ	1	
	SA4	A4+B7		LEQ	1	
	SA5	A5+B7		LEQ	1	
	SB4	B4+1		LEQ	1	
	NE	B4,B1,R02		LEQ	1	
	SA2	A2+B0		LEQ	1	
	SA5	B0+CALL*4		LEQ	1	
	ZR	X5,T	, IF M=0 THEN DET ONLY	LEQ	1	
	SB5	X5+B0		LEQ	1	
	SA5	B0+CALL*6		LEQ	1	
	SB6	X5+B0		LEQ	1	

	SA1	B0+CALL+2		LEQ	1
	SA1	X1+B0		LEQ	1
	SA4	A1+B2		LEQ	1
	SA5	A1+B3		LEQ	1
	SB4	B0+0		LEQ	1
R03	BX6	X4		LEQ	1
	SA6	A5+B0		LEQ	1
	BX6	X5		LEQ	1
	SA6	A4+B0		LEQ	1
	SA4	A4+B6		LEQ	1
	SA5	A5+B6		LEQ	1
	SB4	B4+1		LEQ	1
	NE	B4,B5,R03		LEQ	1
T	SB6	B2+1	,B6=B2+1,...,N-1 COUNTS OFF ROWS	LEQ	1
	SA1	A2+1	,A(B6,B2) TO A1	LEQ	1
TP	SB3	B2+B0	,B3=B2,B2+1,...,N-1 IS COLUMN INDEX	LEQ	2
	SA3	A2+B0	,A3 KEEPS TRACK OF ADDRESSES IN ROW B2	LEQ	2
	SA4	A1+B0	,A4 KEEPS TRACK OF ADDRESSES IN ROW B6	LEQ	2
R05	ZR	X4,IB2	,REDUCTION OF ROW P6 POINTLESS IF	LEQ	2
	BX4	-X4		LEQ	2
	SA2	A2+B0		LEQ	2
	FX1	X4/X2		LEQ	2
	SB3	B3+1		LEQ	2
A85	SA3	A3+B7		LEQ	2
	SA4	A4+B7		LEQ	2
R06	ZR	X3,A86	,A(B2,B3)=0 THEN SKIP	LEQ	2
	FX6	X1*X3		LEQ	2
	FX6	X6+X4		LEQ	2
	NX6	B0,X6		LEQ	2
	SA6	A4+B0		LEQ	2
A86	SB3	B3+1		LEQ	2
	LT	B3,B1,A85		LEQ	2
	SA5	B0+CALL+4		LEQ	2
	SB5	X5+B0		LEQ	2
	EQ	B5,B0,IB2	,IF M=0 THEN DET ONLY	LEQ	2
	SA5	B0+CALL+6		LEQ	2
	SB4	X5+B0		LEQ	2
	SA5	B0+CALL+2		LEQ	2
	SA5	X5+B0		LEQ	2
	SB3	B0+0	,B3=0,1,2,...,M-1 IS COLUMN INDEX	LEQ	2
	SA4	A5+B2	,A4 KEEPS TRACK OF ADDRESSES IN ROW B2 OF B	LEQ	2
	SA3	A5+B6	,A3 DOES SAME FOR ROW B6	LEQ	2
R07	ZR	X4,B43		LEQ	2
	FX6	X1*X4		LEQ	2
	FX6	X6+X3		LEQ	2
	NX6	B0,X6		LEQ	2
	SA6	A3+B0		LEQ	2
B43	SA4	A4+B4		LEQ	2
	SA3	A3+B4		LEQ	2
	SB3	B3+1		LEQ	2
	LT	B3,B5,R07		LEQ	2
IB2	SA1	A1+1	,A(B6+1,B2) TO A1	LEQ	2
	SB6	B6+1		LEQ	2
	LT	B6,B1,TP	,REDUCE ROW B6 IF B6 LESS THAN N	LEQ	2
REDUC	SA2	A2+1		LEQ	2
	SA2	A2+B7		LEQ	2
	SB6	B1-1		LEQ	2
	SB2	B2+1		LEQ	2
	LT	B2,B6,TFORM	,NEXT DIAGONAL ELEMENT IF B2 NE N-1	LEQ	2
	ZR	X2,SING	,X2 HAS A(N-1,N-1	LEQ	2

	FX3	X2*X7	
	OR	X3,SC	
	NZ	X3,CE	
SC	UX7	B4,X7	
	PX7	B0,X7	
	SX5	B4+B0	
	IX0	X0+X5	
	FX3	X2*X7	
CE	BX7	X3	, THIS STEP COMPLETES THE DETERMINANT COMPUTATION
	SA3	B0+CALL+4	,M
	ZR	X3,EXIT	
	SB3	X3+B0	,VALUE OF M IS PUT INT B3
	SA3	B0+CALL+6	
	SB6	X3+B0	,VALUE OF IB IS PUT IN B6
	SB2	B1-1	,B2 =N-1,NNN-2=...,1 IS ROW XOUNTER
	SA3	B0+CALL+2	
	SA3	X3+B0	,ADDRESS OF B IS PT IN A3
NX0	SB4	B2+B0	,B4=B2,B2+1B,...,B2+(MA1)1B
	SB5	B0+0	,B5=0,1,...,M-1
NX1	SA4	A3+B4	,B(B2,B5) IS PT IN X4
	FX6	X4/X2	,X2 HAS A(B2,B2)
	SA6	A4+B0	
	SB4	B4+B6	
	SB5	B5+1	
	LT	B5,B3,NX1	,DIVIDE NEXT ELEMENT IN ROW B2 3F B BY A(B2
	EQ	B2,B0,EXIT	,EXIT AFTER ROW 0 OF B HAS BEEN DIDIDED BY
	SB2	B2-1	
	SB5	B0+0	,B5=0,1,...,M-1
	SB4	B2+1	,B4=B2+1,...,N-1
	SA2	A2-1	
	SA2	A2-B7	,NEXT PREVIOUS DIAGONAL ELEMENT TO X2
	SA4	A2+B7	,A4 IS TO KEEP TRACK OF ELEMENTS OF A IN ROW
	SA1	A3+B2	,B(B2(B5) IS PUT IN X1
NX2	SA5	A1+1	, A5 IS TO KEEP TRACK OF ELEMENTS OF B IN C
NX3	FX6	X5*X4	
	BX6	-X6	
	FX6	X6+X1	
	NX6	B0,X6	
	BX1	X6	
	SA5	A5+1	
	SA4	A4+B7	
	SB4	B4+1	
	LT	B4,B1,NX3	
	BX6	X1	
	SA6	A1+B0	,STORN B(B2,B5) AND GO ON TO BEB2,B5+1)
	SA4	A2+B7	
	SA1	A1+B6	
	SB4	B2+1	
	SB5	B5+1	
	LT	B5,B3,NX2	
	JP	B0+NK0	
EXIT	ZR	X0,AL1	
	NG	X0,SING	
	MX7	14B	
	AX7	01B	
	JP	B0+AL1	
SING	MX7	00B	
AL1	SA1	B0+LEQP	
	AX1	36B	
	SA1	X1+6	

