

LGP-30 CODING SHEET

Division (1)

MULTIPLE REGRESSION 2 - Floating Point

F2-122

PREPARED FOR: LGP-30, RPC-4000 USERS ORGANIZATION - POOL				PAGE 1 / 10
JOB NO.	PROGRAM NO. F2-122	PROGRAM PREPARED BY: R.A. Koenig	PROGRAM CHECKED BY: POOL Review	DATE 6-1-59
PROBLEM: P.I.R., Linkage, ANOVA and Residuals				TRACK 00

PROGRAM INPUT CODES	STOP	LOCATION	INSTRUCTION		STOP	CONTENTS OF ADDRESS	NOTES
			OPERATION	ADDRESS			
3,000 00,00	'						
/,000 00,00	'	<input checked="" type="checkbox"/>					
		0,0,0 0	X P	0,0,1 5	'		
		0 1	C	0,0,4 4	'		} Read Word
		0 2	X I	0,0,0 0	'		
		0 3	S	0,0,4 6	'	<input checked="" type="checkbox"/> 2 @ 3	
		0 4	T	0,0,2 4	'		→ Not + Command
		0 5	S	0,0,4 1	'		1 @ 3
		0 6	T	0,0,0 8	'		→ O.K. for + Command
		0 7	U	0,0,2 4	'	<input checked="" type="checkbox"/>	→ Not + Command
		0 8	H	0,0,4 4	'		Original Word
		0 9	N	0,0,2 4	'		1 @ 29
		1 0	E	0,0,6 0	'		3WWJ
		1 1	H	0,0,4 7	'	<input checked="" type="checkbox"/>	N ₁
		1 2	E	0,0,4 8	'		3J3JO
		1 3	M	0,0,4 2	'		-6 @ 4
		1 4	U	0,0,1 8	'		
		1 5	['	<input checked="" type="checkbox"/>	R Ctr # 3 (0443, 0357, 0350, 0348)
		1 6	[		'		R @ 29 (0351)
		1 7	[		'		Read Flag (0345, 0333, 0321)
		1 8	A	0,0,4 7	'		N ₁
		1 9	H	0,0,6 2	'	<input checked="" type="checkbox"/>	N ₂
		2 0	E	0,0,4 9	'		WJ00
		2 1	M	0,0,4 3	'		-3/4 @ 0
		2 2	U	0,0,2 6	'		
		2 3	['	<input checked="" type="checkbox"/>	P Ctr. 3 (0363, 0401)
		2 4	X, Z	0,0,0 1	'		Stop: Error in Command 1 29 (0009) (0152) (0309)
		2 5	U	0,0,2 4	'		Continue in Error Loop
		2 6	A	0,0,6 2	'		N ₂
		2 7	H	0,0,6 3	'	<input checked="" type="checkbox"/>	Address
		2 8	B	0,0,5 0	'		W0000
		2 9	E	0,0,4 4	'		Original Word - Save order bits
		3 0	U	0,0,3 4	'		
		3 1	X, Z	0,0,0 8	'	<input checked="" type="checkbox"/>	32 @ 31 (0123)

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JOB NO.	PROGRAM NO. F2-122	PROGRAM PREPARED BY: R.A. Koenig	PROGRAM CHECKED BY: POOL Review	DATE 6-1-59
PROBLEM: P.I.R., Linkage, ANOVA and Residuals				TRACK 00

PROGRAM INPUT CODES	STOP	LOCATION	INSTRUCTION		STOP	CONTENTS OF ADDRESS	NOTES
			OPERATION	ADDRESS			
	/						
	/	00 3 2	XZ	0001	/	1 @ 29	(0317, 0410)
		3 3	[		/	R @ 29	(0154, 0104, 0211)
		3 4	A	0063	/	Address	
		3 5	C	0038	/	<input checked="" type="checkbox"/> Store Command	
		3 6	XP	0001	/	} Read 2 nd Word in Hex	
		3 7	XI	0002	/		
, 000 0013	'	3 8	[		/		Execute + Command
		3 9	U	0000	/	<input checked="" type="checkbox"/> →	Return for next command
		4 0		4	/	1 @ 29	(0304)
		4 1	1000	0000	/	1 @ 3	(0005)
		4 2	K000	0000	/	-6 @ 4	(0013)
		4 3	F000	0000	/	<input checked="" type="checkbox"/> -3/4 @ 0	(0021)
		4 4	[		/	Temp.	(0001, 0008, 0029)
		4 5	[		/	P @ 29	(0402)
		4 6	2000	0000	/	2 @ 3	(0003)
		4 7	[/	<input checked="" type="checkbox"/> Temp.	(0011, 0018)
		4 8	3J3J	0	/	Mask	(0012)
		4 9	WJ00	0	/	Mask	(0020)
		5 0	W000	0	/	Mask	(0028)
		5 1	R043	9	/	<input checked="" type="checkbox"/> } Double c.r.	
		5 2	U043	5	/	} Print Inverse Matrix	
		5 3	XR	2007	/	} Print Solutions	
		5 4	XU	2019	/		
		5 5	R043	9	/	<input checked="" type="checkbox"/> } Double c.r.	
		5 6	U043	5	/	} Print out ANOVA	
		5 7	XR	2007	/		
		5 8	XU	2026	/		
		5 9	U013	2	/	<input checked="" type="checkbox"/> →	Print out ANOVA
, 000 0004	'	6 0	3WWW	J	/	Mask	(0010)
		6 1	[/	n Ctr.	(0318, 0353)
		6 2	[/	Temp.	(0019, 0026)
		6 3	[/	<input checked="" type="checkbox"/> Temp.	(0027, 0034)

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PREPARED FOR:					PAGE OF		
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JOB NO.	PROGRAM NO.	PROGRAM PREPARED BY:	PROGRAM CHECKED BY:	DATE			
	F2-122	R.A. Koenig	POOL Review	6-1-59			
PROBLEM:					TRACK		
P.I.R., Linkage, ANOVA Residuals					01		
PROGRAM INPUT CODES	STOP	LOCATION	INSTRUCTION		STOP	CONTENTS OF ADDRESS	NOTES
			OPERATION	ADDRESS			
	/						
	/	<input checked="" type="checkbox"/>					
		Q 1 0 0	X R	3 0 5 4	/	} Matrix	Start Here
		0 1	X U	2 7 0 6	/		} Assembly
		0 2	X Z	3 2 0 0	/		Matrix Assembly Compl.
		0 3	X B	2 7 1 7	/	<input checked="" type="checkbox"/>	r @ 29
		0 4	H	0 0 3 3	/		r @ 29
		0 5	X H	2 0 1 2	/		r @ 29 Print out
		0 6	X H	2 3 1 8	/		r @ 29 Corr-Regr.
		0 7	H	0 0 1 6	/	<input checked="" type="checkbox"/>	r @ 29
		0 8	X B	2 6 4 8	/		p @ 29
		0 9	U	0 4 5 5	/		
		1 0	X R	3 5 0 0	/		} Set exit in inversion and solution
		1 1	U	0 1 1 4	/	<input checked="" type="checkbox"/>	
		1 2	X Z	1 6 0 0	/		Stop: Inversion & Solution Completed
		1 3	U	0 0 5 1	/		→ Print Inverse & Solution
		1 4	B	0 0 1 6	/		r @ 29
		1 5	X H	6 3 1 2	/	<input checked="" type="checkbox"/>	Temp.
		1 6	B	0 0 4 5	/		p @ 29
		1 7	X R	3 1 3 9	/		Set exit after storing pivot element
		1 8	X U	3 1 0 0	/		→ Enter Inversion & Solution
		1 9	X C	6 3 0 5	/	<input checked="" type="checkbox"/>	Dump Acc.
		2 0	U	0 1 5 3	/		
		2 1	[		/		p @ 29 (0406)
		2 2	B	0 1 3 7	/		r Ctr. # 1
		2 3	N	0 0 3 1	/	<input checked="" type="checkbox"/>	32 @31
		2 4	A	0 2 0 3	/		XZ6000
		2 5	X A	3 2 4 7	/		Row No.
		2 6	Y	0 1 4 1	/		} B[] X'y } Set up Address for S.S. for each $\hat{\beta}_i$
		2 7	Y	0 1 4 2	/	<input checked="" type="checkbox"/>	
		2 8	S	0 2 1 4	/		XZ3400
		2 9	Y	0 1 4 4	/		H[] S.S. β_i
		3 0	U	0 1 3 9	/		
		3 1	X Z	3 6 0 0	/	<input checked="" type="checkbox"/>	(0359)

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CARRIAGE RETURN

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JOB NO.	PROGRAM NO. F2-122	PROGRAM PREPARED BY: R.A. Koenig	PROGRAM CHECKED BY: POOL Review	DATE 6-1-59
PROBLEM: P.I.R., Linkage, ANOVA and Residuals				TRACK 01

PROGRAM INPUT CODES	STOP	LOCATION	INSTRUCTION		STOP	CONTENTS OF ADDRESS	NOTES
			OPERATION	ADDRESS			
	/						
	/	<input checked="" type="checkbox"/>					
		Q 1,3,2	R	0,4,3,9	/		} Double c.r.
		3,3	U	0,4,3,5	/		
		3,4	U	0,2,0,0	/		
		3,5	X,Z	0,0,0,1	/	<input checked="" type="checkbox"/> Delay &	1 @ 29 (0300,0349)
		3,6	X,P	1,6,0,1	/		c.r.
		3,7	[		/	r Ctr.# 1 &	delay (0151,0122,0120,0153)
		3,8	U	0,2,4,2	/		
		3,9	X,R	0,5,0,0	/	<input checked="" type="checkbox"/>	} Floating Point
		4,0	X,U	0,5,0,0	/		
		4,1	B	[	/	X'y	
		4,2	M	[	/	X'y	
		4,3	X,D	6,3,1,4	/	<input checked="" type="checkbox"/>	Pivot Element
		4,4	H	[	/		S.S. β_i
		4,5	E	0,1,5,1	/		Exit & Transfer
		4,6	[		/	R Ctr# 2	(0208,0210,0217,0224)
		4,7	[/	<input checked="" type="checkbox"/> Y Flag	(0332)
		4,8			/		
		4,9	[		/	X Flag	(0320,0315)
		5,0			/		
		5,1	B	0,1,3,7	/	<input checked="" type="checkbox"/> R Ctr# 1	
		5,2	A	0,0,2,4	/	1 @ 29	
		5,3	H	0,1,3,7	/	R Ctr# 1	
		5,4	S	0,0,3,3	/	r @ 29	
		5,5	T	0,1,2,2	/	<input checked="" type="checkbox"/> → Not Done All y's in ANOVA	
		5,6	X,U	3,1,2,6	/	→ Continue Inversion	
		5,7	X,Z	0,0,0,8	/	32 @ 31	(0442)
		5,8	X,Z	0,0,0,1	/	1 @ 29	(0343)
		5,9	X,H	3,7,0,0	/	<input checked="" type="checkbox"/> S.S. β_i	} F.P. Patch
		6,0	X,A	3,5,5,5	/	Δ S.S. due to Regr.	
		6,1	X,H	3,5,5,5	/		
		6,2	U	0,2,4,7	/		
		6,3			/	<input checked="" type="checkbox"/>	

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PROBLEM: P.I.R., Linkage, ANOVA and Residuals			TRACK 02	

PROGRAM INPUT CODES	STOP	LOCATION	INSTRUCTION		STOP	CONTENTS OF ADDRESS	NOTES
			OPERATION	ADDRESS			
		0,2,0,0	X,Z	0,8,0,0			Solutions & Inverse Pr.
		0,1	X,C	6,3,5,1			Dump
		0,2	U	0,2,1,0			
		0,3	X,Z	6,0,0,0			(0124)
		0,4	X,Z	0,0,0,8		32 @ 31	(0128)
		0,5	X,Z	2,6,0,0			(0219)
		0,6	X,I	3,6,3,2			(0334,0310)
		0,7	X,I	3,6,3,2			(0356)
		0,8	B	0,1,4,6			} Δ Ctr # 2
		0,9	A	0,0,2,4		1 @ 29	
		1,0	H	0,1,4,6			
		1,1	S	0,0,3,3		r @ 29	
		1,2	T	0,2,1,5		→ Not done Printing ANOVA	
		1,3	U	0,3,0,9		All done w/ ANOVA	
		1,4	X,Z	3,4,0,0			(0128)
		1,5	R	0,4,3,9			} Double c.r.
		1,6	U	0,4,3,5			
		1,7	B	0,1,4,6		r Ctr # 2	
		1,8	N	0,2,0,4		32 @ 31	
		1,9	A	0,2,0,5		XZ2600	
		2,0	U	0,2,2,1			
		2,1	Y	0,2,3,6		B[]	S.S.β ₀
		2,2	Y	0,2,4,4		B[]	S.S.β ₁
		2,3	B	0,4,5,2		XS3536	
		2,4	A	0,1,4,6		r Ctr.# 2	
		2,5	C	0,2,3,8		S[]Zy ²	
		2,6	C	0,3,5,5		P Ctr# 2	
		2,7	U	0,2,3,2			
		2,8					
		2,9					
		3,0	X,Z	6,0,0,0			(0444)
		3,1					

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CARRIAGE RETURN

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PROBLEM: P.I.R., Linkage, ANOVA and Residuals				TRACK 02	

PROGRAM INPUT CODES	STOP	LOCATION	INSTRUCTION		STOP	CONTENTS OF ADDRESS	NOTES
			OPERATION	ADDRESS			
		0 2 3 2	X R	0 5 0 0			} Fl.Pt.
		3 3	X U	0 5 0 0			
		3 4	X B	3 5 4 1			} Initialize d.f. with n-1
		3 5	X H	3 5 5 3	<input checked="" type="checkbox"/>		
		3 6	B [			S.S. β_0	
		3 7	X P	0 0 0 0			Print S.S. β_0
		3 8	S [			Σy^2	
		3 9	X Y	0 0 0 0	<input checked="" type="checkbox"/>		Change Sign
		4 0	X H	3 5 5 4			Error S.S.
		4 1	U	0 3 3 6			
		4 2	X R	0 5 0 0			} Fl.Pt.
		4 3	X U	0 5 0 0	<input checked="" type="checkbox"/>		
		4 4	B [			S.S. β_i	
		4 5	X P	0 0 0 0			
		4 6	U	0 1 5 9			Patch #1
		4 7	X B	3 7 0 0	<input checked="" type="checkbox"/>	S.S. β_i	
		4 8	X S	3 5 5 4			Error S.S.
		4 9	X Y	0 0 0 0			Change Sign
		5 0	X H	3 5 5 4			Error S.S.
		5 1	X P	0 0 0 0	<input checked="" type="checkbox"/>		Print Error S.S.
		5 2	X D	3 5 5 3		d.f.	
		5 3	X P	0 0 0 0			Error M.S.
		5 4	X R	0 0 0 0			√
		5 5	X P	0 0 0 0	<input checked="" type="checkbox"/>		Standard Dev.
		5 6	X B	3 5 5 5			S.S. due to Regr.
		5 7	X D	3 7 0 1			Total S.S.
		5 8	X P	0 0 0 0			Print R ²
		5 9	X B	3 5 5 3	<input checked="" type="checkbox"/>	d.f.	
		6 0	X P	0 0 0 0			Print d.f.
		6 1	X S	3 5 5 2		1	
		6 2	X H	3 5 5 3		d.f.	
		6 3	E	0 3 0 0	<input checked="" type="checkbox"/>		Exit & Transfer

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PROBLEM: P.I.R., Linkage, ANOVA and Residuals				TRACK 03

PROGRAM INPUT CODES	STOP	LOCATION	INSTRUCTION		STOP	CONTENTS OF ADDRESS	NOTES
			OPERATION	ADDRESS			
	/						
	/	0,3,0 0	B	0 1,3 5	'	1 @ 29	} Δ B [] S.S. β _i
		0 1	A	0 2,4 4	'		
		0 2	Y	0 2,4 4	'		
		0 3	B	0 3,5 5	'	⊗ P Ctr. # 2	
		0 4	A	0 0,4 0	'	1 @ 29	
		0 5	H	0 3,5 5	'	P Ctr. # 2	
		0 6	S	0 1,2 1	'	p @ 29	
		0 7	T	0 1,3 6	'	⊗ →	Not done this ANOVA
		0 8	U	0 2,0 8	'	→	Done to next Y
		0 9	X Z	0 4,0 0	'		Stop: ANOVA All Printed
		1 0	B	0 2,0 6	'	XI3632	
		1 1	A	0 0,3 3	'	⊗ r @ 29	
		1 2	H	0 1,4 7	'	Y Flag	
		1 3	B	0 4,5 1	'	XI3600	
		1 4	A	0 0,4 5	'	p @ 29	
		1 5	H	0 1,4 9	'	⊗ X Flag	
		1 6	X B	2 8,1 8	'	n @ 29	
		1 7	S	0 0,3 2	'	l @ 29	
		1 8	H	0 0,6 1	'	n Ctr.	
		1 9	T	0 0,4 1	'	⊗ →	All Done: Complete
		2 0	B	0 1,4 9	'	X Flag	
		2 1	H	0 0,1 7	'		Read Flag
		2 2	B	0 4,5 1	'	XI3600	
		2 3	R	0 3,4 7	'	⊗ }	Read Loop for X
		2 4	U	0 3,4 4	'		
		2 5	R	0 3,4 7	'		} Read Loop for Y
		2 6	U	0 3,3 2	'		
		2 7	U	0 3,5 0	'	⊗ →	This line Read in
		2 8	X R	0 5,0 0	'		} Fl.Pt.
		2 9	X U	0 5,0 0	'		
		3 0	I	[]	'		Read one No. into []
		3 1	E	0 3,4 2	'	⊗	Exit & Transfer

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PROBLEM: P.I.R., Linkage, ANOVA AND Residuals				TRACK 03

PROGRAM INPUT CODES	STOP	LOCATION	INSTRUCTION		STOP	CONTENTS OF ADDRESS	NOTES
			OPERATION	ADDRESS			
	/						
	/	0,3,3,2	B	0,1,4,7	/	Y Flag	
		3,3	H	0,0,1,7	/		Read Flag
		3,4	B	0,2,0,6	/	XI3632	
		3,5	U	0,3,4,4	/		
		3,6	X C	3,7,0,1	/	Total S.S.	
		3,7	X C	3,5,5,5	/	Error S.S.	
		3,8	X C	3,7,0,0	/	S.S. β ₀	
		3,9	U	0,2,4,8	/		
		4,0			/		
		4,1			/		
		4,2	B	0,3,3,0	/		} Δ I[]
		4,3	A	0,1,5,8	/	1 @ 29	
		4,4	Y	0,3,3,0	/		
		4,5	S	0,0,1,7	/	Read Flag	
		4,6	T	0,3,2,8	/	→	Not done reading Loop
		4,7	U	[]	/		Exit Read Loop
		4,8	B	0,0,1,5	/	r Ctr. #3	
		4,9	A	0,1,3,5	/	1 @ 29	
		5,0	H	0,0,1,5	/	r Ctr. #3	
		5,1	S	0,0,1,6	/	r @ 29	
		5,2	T	0,3,5,6	/	→ Not done	this line for residuals
		5,3	B	0,0,6,1	/	n Ctr.	Here : This line Complete
		5,4	U	0,3,1,7	/		
		5,5	[]		/	P Ctr. #2	(0303,0305,0228)
		5,6	B	0,2,0,7	/	XI3632	
		5,7	A	0,0,1,5	/	r Ctr. #3	
		5,8	Y	0,4,1,6	/	B[] y obs.	
		5,9	B	0,1,3,1	/	XZ3600	
		6,0	Y	0,4,3,0	/	B[] X	
		6,1	U	0,4,4,2	/		
		6,2			/		
		6,3	B	0,0,2,3	/	P Ctr. #3	

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PROBLEM: P.I.R., Lin age, ANOVA and Residuals				TRACK 04

PROGRAM INPUT CODES	STOP	LOCATION	INSTRUCTION		STOP	CONTENTS OF ADDRESS	NOTES
			OPERATION	ADDRESS			
	/						
	/	Q 4,0 0	A	Q 4,3 6	/	1 @ 29	
		0 1	H	Q 0,2 3	/	P Ctr. #3	
		0 2	S	Q 0,4 5	/	p @ 29	
		0 3	T	Q 4,0 6	/	→ Not done w/Vector-Vector Multi.	
		0 4	X P	1 6,1 9	/		
		0 5	U	Q 4,1 3	/		
		0 6	B	Q 4,3 0	/		} Δ B [] X
		0 7	A	Q 4,3 6	/	1 @ 29	
		0 8	Y	Q 4,3 0	/		} Δ M [] β
		0 9	B	Q 4,3 1	/		
		1 0	A	Q 0,3 2	/	1 @ 29	
		1 1	Y	Q 4,3 1	/		
		1 2	U	Q 4,2 8	/		
		1 3	X Z	Q 0,0 0	/	Delay	
		1 4	X R	Q 5,0 0	/		} Fl.Pt.
		1 5	X U	Q 5,0 0	/		
		1 6	B []		/	y observed	
		1 7	X P	Q 0,0 0	/	Print	
		1 8	X S	6 3,1 4	/	y pred.	
		1 9	X H	3 6,3 6	/	Resid.	
		2 0	X B	6 3,1 4	/	y pred.	
		2 1	X P	Q 0,0 0	/	Print	
		2 2	X B	3 6,3 6	/	Residual	
		2 3	X P	Q 0,0 0	/	Print	
		2 4	E	Q 3,4 8	/		
		2 5			/		
		2 6			/		
		2 7			/		
		2 8	X R	Q 5,0 0	/		} Fl. Pt.
		2 9	X U	Q 5,0 0	/		
		3 0	B []		/	X _i	
		3 1	M []		/	β _i	

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LGP-30 CODING SHEET

Division (1)

PREPARED FOR: LGP-30, RPC-4000 USERS ORGANIZATION -POOL				PAGE 10 OF 10
JOB NO.	PROGRAM NO. F2-122	PROGRAM PREPARED BY: R.A. Koenig	PROGRAM CHECKED BY: POOL Review	DATE 6-1-59
PROBLEM: P.I.R., Linkage, ANOVA and Residuals				TRACK 04

PROGRAM INPUT CODES	STOP	LOCATION	INSTRUCTION		STOP	CONTENTS OF ADDRESS	NOTES
			OPERATION	ADDRESS			
	/						
	/	04,32	X,A	6,3,14	/	} $\sum \beta_i X_i = \text{Predicted}$	
		3,3	X,H	6,3,14	/		
		3,4	E	0,3,63	/		
		3,5	X,P	1,6,00	/	} 1 @ 29 Double C.R.	(0400,0407)
		3,6	X,Z	0,0,01	/		
		3,7	X,P	1,6,02	/		
		3,8	X,Z	0,0,03	/		
		3,9	U	[]	/		
		4,0			/		
		4,1			/		
		4,2	B	0,1,57	/	32 @ 31	
		4,3	N	0,0,15	/	R Ctr.#3	
		4,4	A	0,2,30	/	XZ6000	
		4,5	Y	0,4,31	/		
		4,6	X,C	6,3,04	/	Dump	
		4,7	C	0,0,23	/	P Ctr.#3	
		4,8	U	0,4,49	/		
		4,9	X,C	6,3,14	/	Fraction for $\sum \beta_i X_i$	
		5,0	U	0,4,28	/		
		5,1	X,I	3,6,00	/		(0322,0313)
		5,2	X,S	3,5,36	/		(0223)
		5,3			/		
		5,4			/		
		5,5	R	0,4,39	/	} Double c.r.	
		5,6	U	0,4,35	/		
		5,7	H	0,1,21	/	p @ 29	
		5,8	X,H	2,0,11	/	p @ 29	Print out
		5,9	H	0,0,45	/	p @ 29	
		6,0	X,R	2,3,58	/	} Correlation-Regression	
		6,1	X,U	2,1,00	/		
		6,2	X,Z	1,6,00	/		Stop: Corr. Reg. Completed
		6,3	U	0,1,10	/	→ To Inversion & Solution	

LGP-30 CODING SHEET

Division (3)

MULTIPLE REGRESSION 2 - FLOATING POINT

F2-122

PREPARED FOR			LGP-30, RPC-4000 USERS ORGANIZATION - POOL		PAGE	1 / 2
JOB NO.	PROGRAM NO.	PROGRAM PREPARED BY:	PROGRAM CHECKED BY:	DATE	3-15-59	
	F2-122	R.A. Koenig	POOL Review	TRACK	00	
PROBLEM:					Matrix Print-Out	

PROGRAM INPUT CODES	STOP	LOCATION	INSTRUCTION		STOP	CONTENTS OF ADDRESS	NOTES
			OPERATION	ADDRESS			
;0,000	20,000	'					
/,000	20,000	'					
		0,000	B	0060	'	XZ3600	Here: Print X'x
		001	H	0015	'		
		002	B	0011	'	p @ 29	
		003	S	0008	'	1 @ 29	
		004	H	0010	'	Col. Ctr.	
		005	R	0049	'		} Printing Loop
		006	U	0048	'		
		007	U	[]	'	Exit	"R" to here
		008	X,Z	0001	'	1 @ 29	(0036,0003,0027)
		009			'		
		100	[]		'	Col. Ctr.	
		101	[]		'	p @ 29	
		102	[]		'	r @ 29	
		103			'		
		104			'		
		105	[]		'	Temp. for Add 1 st Element in Row	
		106	X,Z	0001	'	1 @ 29	(0044)
		107	X,Z	0032	'	32 @ 29	(0052)
		108	[]		'	Row Ctr.	
		109	B	0059	'	XZ4800	Here to print inverse
		200	U	0001	'		
		201	X,R	0500	'		} Fl. Pt.
		202	X,U	0500	'		
		203	B	[]	'	N to print	
		204	X,P	0000	'	Print N	
		205	E	0035	'	Exit & Transfer	
		206	B	0011	'	p @ 29	Here to print X'y
		207	S	0008	'	1 @ 29	
		208	H	0010	'	Col. Ctr.	
		209	B	0061	'	XZ6000	
		300	H	0015	'		
		301	B	0012	'	r @ 29	

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LGP-30 CODING SHEET

Division (3)

PREPARED FOR: LGP-30, RPC-4000 USERS ORGANIZATION - POOL				PAGE 2 OF 2
JOB NO.	PROGRAM NO. F2-122	PROGRAM PREPARED BY: R.A. Koenig	PROGRAM CHECKED BY: POOL Review	DATE 3-15-59
PROBLEM: Matrix Print-Out				TRACK 00

PROGRAM INPUT CODES	STOR	LOCATION	INSTRUCTION		STOR	CONTENTS OF ADDRESS	NOTES
			OPERATION	ADDRESS			
		0,0,3,2	R	0,0,4,9	'		} Printing Loop
		3,3	U	0,0,4,7	'		
		3,4	U	0,0,0,7	'		→ To Exit
		3,5	B	0,0,2,3	'		} Δ B[]
		3,6	A	0,0,0,8	'	1 @ 29	
		3,7	Y	0,0,2,3	'		
		3,8	B	0,0,1,0	'	Col. Ctr.	
		3,9	S	0,0,5,4	'		} Δ Col. CTr.
		4,0	H	0,0,1,0	'	1 @ 29	
		4,1	T	0,0,4,3	'		Done Printing Col.
		4,2	U	0,0,2,1	'		
		4,3	B	0,0,1,1	'		} Δ Row Ctr.
		4,4	S	0,0,1,6	'	p @ 29	
		4,5	H	0,0,1,0	'	1 @ 29	
		4,6	B	0,0,1,8	'	Col. Ctr.	
		4,7	S	0,0,6,2	'	Row Ctr.	
		4,8	H	0,0,1,8	'	1 @ 29	
		4,9	T	[, ,]	'	Row Ctr.	
		5,0	B	0,0,1,5	'		Exit from Print Loop
		5,1	Y	0,0,2,3	'		Initial Row Address
		5,2	A	0,0,1,7	'		Initialize B[]
		5,3	X P	1,6,0,4	'		32 @ 29
		5,4	X Z	0,0,0,1	'		C.R.
		5,5	X P	1,6,0,6	'		Delay & 1 @ 29 (0039)
		5,6	X Z	0,0,0,0	'		C.R.
		5,7	H	0,0,1,5	'		Delay
		5,8	U	0,0,2,1	'		Initial Row Address
		5,9	X Z	4,8,0,0	'		Lo Inverse (0033)
		6,0	X Z	3,6,0,0	'		Lo X'x (0026)
		6,1	X Z	6,0,0,0	'		Lo X'y (0011)
		6,2	X Z	0,0,0,1	'		1 @ 29 (0047)
		6,3			'		

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PREPARED FOR: LGP-30, RPC-4000 USERS ORGANIZATION - POOL				PAGE 1 / 10
JOB NO.	PROGRAM NO. F2-122	PROGRAM PREPARED BY R.A. Koenig	PROGRAM CHECKED BY: POOL Review	DATE 5-5-59
PROBLEM: Individual Correlation and Regression				TRACK 00

PROGRAM INPUT CODES	STOP	LOCATION	INSTRUCTION		STOP	CONTENTS OF ADDRESS	NOTES
			OPERATION	ADDRESS			
; 0,0,0 2,1,0,0	'						
/ 0,0,0 2,1,0,0	'	<input checked="" type="checkbox"/>					
		0,0,0 0	H	0,2,2,0	'	p @ 29	Enter here: p @ 29 in acc.
		0 1	X, C	6,3,3,8	'	Counting Flag	
		0 2	X, C	6,3,5,7	'	Asterisk Flag	
		0 3	X, C	6,3,5,3	'	<input checked="" type="checkbox"/> Finish Flag	
		0 4	U	0,1,3,1	'		
		0 5	B	0,1,2,7	'	(XZ3632)	ΣX_1
		0 6	Y	0,0,2,8	'	<input checked="" type="checkbox"/> } Intialize	B() ΣX
		0 7	Y	0,0,2,9	'		M() ΣX
		0 8	Y	0,0,2,3	'		B() ΣX
		0 9	A	0,2,3,1	'	1 @ 29	
		1 0	Y	0,0,3,1	'	B() ΣX^2	
		1 1	B	0,1,2,6	'	<input checked="" type="checkbox"/> XZ6233	
		1 2	Y	0,0,2,7	'	H() \bar{X}	
		1 3	B	0,1,2,8	'	XZ6201	
		1 4	Y	0,0,3,4	'	H() X	
		1 5	B	0,1,3,0	'	<input checked="" type="checkbox"/> 33 @ 29	
		1 6	X, H	6,3,1,8	'	Δ for modifying ΣX^2	
		1 7	R	0,0,6,1	'	} Compute $\Sigma X, \bar{X}$ & s for all X's	
		1 8	U	0,1,0,0	'		
		1 9	U	0,1,4,7	'	<input checked="" type="checkbox"/> → Compute $\Sigma X, \bar{X}$ & s for Y's	
		2 0	X, Z	0,0,0,6	'	Delay & 6 @ 29	(0105)
		2 1	X, R	0,5,0,0	'	} Fl. Pt.	
		2 2	X, U	0,5,0,0	'		
		2 3	B ()		'	<input checked="" type="checkbox"/> ΣX_i	
		2 4	X, P	0,0,0,0	'	Print ΣX	
		2 5	X, D	3,5,4,0	'	n	
		2 6	X, P	0,0,0,0	'	Print \bar{X}	
		2 7	H ()		'	<input checked="" type="checkbox"/> Store \bar{X}	
		2 8	B ()		'	ΣX_i	
		2 9	M ()		'	ΣX_i	
		3 0	X, H	6,3,1,4	'	$(\Sigma X_i)^2$	
		3 1	B ()		'	<input checked="" type="checkbox"/> ΣX^2	

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PREPARED FOR: LGP-30, RPC-4000 USERS ORGANIZATION - POOL				PAGE OF 2 / 10
JOB NO.	PROGRAM NO. F2-122	PROGRAM PREPARED BY: R.A. Koenig	PROGRAM CHECKED BY: POOL Review	DATE 5-5-59
PROBLEM: Individual Correlation and Regression				TRACK 00

PROGRAM INPUT CODES	STOP	LOCATION	INSTRUCTION		STOP	CONTENTS OF ADDRESS	NOTES
			OPERATION	ADDRESS			
	/						
	/	<input checked="" type="checkbox"/>					
		0 0 3 2	X M	3 5 4 0	/	n	
		3 3	X S	6 3 1 4	/	(ΣX) ²	
		3 4	X H	()	/	X _i	
		3 5	X D	3 5 4 3	/	<input checked="" type="checkbox"/> n(n-1)	
		3 6	X R	0 0 0 0	/	√	
		3 7	X P	0 0 0 0	/	Std. dev.	
		3 8	E	0 0 4 0	/		
		3 9	X P	0 2 0 6	/	<input checked="" type="checkbox"/> Dummy	(0117)
		4 0	B	0 1 1 9	/	32 @ 29	} ΔB() B() ΣX _i M()
		4 1	A	0 0 2 8	/		
		4 2	Y	0 0 2 8	/		
		4 3	Y	0 0 2 9	/	<input checked="" type="checkbox"/>	
		4 4	Y	0 0 2 3	/		
		4 5	B	0 0 3 1	/		} ΔB() ΣX ²
		4 6	X A	6 3 1 8	/	1 @ 29, 33 @ 29	
		4 7	Y	0 0 3 1	/	<input checked="" type="checkbox"/>	
		4 8	B	0 0 2 7	/		} ΔH() X̄
		4 9	A	0 2 2 8	/		
		5 0	Y	0 0 2 7	/		
		5 1	B	0 0 3 4	/	<input checked="" type="checkbox"/>	} ΔH() X _i
		5 2	A	0 2 3 1	/		
		5 3	U	0 0 5 5	/		
		5 4	X Z	0 0 1 0	/	10 @ 29	(0111)
		5 5	Y	0 0 3 4	/	<input checked="" type="checkbox"/>	
		5 6	B	0 1 2 3	/	X Ctr.	
		5 7	A	0 1 0 8	/	1 @ 29	
		5 8	H	0 1 2 3	/	X Ctr.	
		5 9	X S	6 3 3 8	/	<input checked="" type="checkbox"/> Counting flag (p or r @ 29)	
		6 0	T	0 1 0 0	/	→ Not done	
		6 1	U	()	/	Exit from	ΣX, X̄ & s loop
		6 2	X P	0 6 1 3	/	"1"	Here: 1 st char.= 1
		6 3	U	0 1 1 5	/	<input checked="" type="checkbox"/>	

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PREPARED FOR: LGP-30, RPC-4000 USERS ORGANIZATION - POOL				PAGE 3	OF 10
JOB NO.	PROGRAM NO. F2-122	PROGRAM PREPARED BY: R.A. Koenig	PROGRAM CHECKED BY: POOL Review	DATE 5-5-59	
PROBLEM: Individual Correlation and Regression				TRACK 01	

PROGRAM INPUT CODES	STOP	LOCATION	INSTRUCTION		STOP	CONTENTS OF ADDRESS	NOTES
			OPERATION	ADDRESS			
	/						
	/	<input checked="" type="checkbox"/>					
		0,1,0,0	X,P	1,6,1,5	/	c.r.	
		0,1	B	0,1,2,3	/	X Ctr	
		0,2	R	0,2,4,2	/		} 2 Char. Print Rout.
		0,3	U	0,1,0,8	/	<input checked="" type="checkbox"/>	
		0,4	U	0,0,2,0	/	→	Compute quantities
		0,5	S	0,0,2,0	/		Make finish flag "-"
		0,6	X,C	6,3,5,3	/		Store " "
		0,7	U	0,3,5,8	/	<input checked="" type="checkbox"/>	→ Set up final X,Y
		0,8	X,Z	0,0,0,1	/	Delay & 1 @ 29	(0057,0429)
		0,9	S	0,2,3,8	/	10 @ 29	
		1,0	T	0,2,3,5	/	→	1st Char. = 0
		1,1	S	0,0,5,4	/	<input checked="" type="checkbox"/>	10 @ 29
		1,2	T	0,0,6,2	/	→	1st Char. = 1
		1,3	X,P	1,0,6,3	/	"2"	Here 1st Char. = 2
		1,4	U	0,1,1,6	/		
		1,5	A	0,2,3,0	/	<input checked="" type="checkbox"/>	10 @ 29
		1,6	N	0,2,2,4	/	4 @ 25	Shift to track Pos.
		1,7	A	0,0,3,9	/	XP0206	Form 2nd print Inst.
		1,8	C	0,1,2,0	/		
		1,9	X,Z	0,0,3,2	/	<input checked="" type="checkbox"/>	32 @ 29 & Delay (0040,0304)
		2,0	(		/		Second print instruction
		2,1	X,B	6,3,5,7	/		Asterisk flag
		2,2	T	0,2,1,6	/	→	Print *
		2,3	Z	(/	<input checked="" type="checkbox"/>	Delay & X Ctr. (0101,0058, 0056,0161)
		2,4	U	0,2,3,7	/	→	Print spaces
		2,5	X,Z	0,0,0,1	/	1 @ 29	(0253,0353,0360)
		2,6	X,Z	6,2,3,3	/	Lo \bar{X} storage	(0011)
		2,7	X,Z	3,6,3,2	/	<input checked="" type="checkbox"/>	Lo ΣX_i (0005)
		2,8	X,Z	6,2,0,1	/		(0013,0358)
		2,9	X,Z	0,0,3,2	/	32 @ 29	(0307)
		3,0	X,Z	0,0,3,3	/	33 @ 29	(0015)
		3,1	B	0,2,2,3	/	<input checked="" type="checkbox"/>	1 @ 1

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CARRIAGE RETURN

PREPARED FOR: LGP-30, RPC-4000 USERS ORGANIZATION - POOL				PAGE 4 / OF 10
JOB NO.	PROGRAM NO. F2-122	PROGRAM PREPARED BY: R.A. Koenig	PROGRAM CHECKED BY: POOL Review	DATE 5-5-59
PROBLEM: Individual Correlation and Regression				TRACK 01

PROGRAM INPUT CODES	STOP	LOCATION	INSTRUCTION		STOP	CONTENTS OF ADDRESS	NOTES	
			OPERATION	ADDRESS				
	/							
	/	<input checked="" type="checkbox"/>						
		0 1 3 2	X H	0 5 4 2	/	F1. Pt. Acc.		
		3 3	B	0 4 6 3	/	257 @ 29		
		3 4	X H	0 5 4 1	/	Exp. Acc.		
		3 5	X R	0 5 0 0	/	<input checked="" type="checkbox"/>	} F1. Pt.	
		3 6	X U	0 5 0 0	/			
		3 7	X H	6 3 1 4	/	Store "1" temp.		
		3 8	X S	3 5 4 0	/	n		
		3 9	X Y	0 0 0 0	/	<input checked="" type="checkbox"/>	Change sign	
		4 0	X H	3 5 4 1	/	n-1		
		4 1	X S	6 3 1 4	/	1		
		4 2	X H	3 5 4 2	/	n-2		
		4 3	X B	3 5 4 0	/	<input checked="" type="checkbox"/> n		
		4 4	X M	3 5 4 1	/	n-1		
		4 5	X H	3 5 4 3	/	n(n-1)		
		4 6	E	0 2 3 2	/			
		4 7	B	0 2 3 1	/	<input checked="" type="checkbox"/> 1 @ 29	Here start $\Sigma y, \bar{y}$ & Δy	
		4 8	A	0 2 1 8	/	r @ 29		
		4 9	X H	6 3 3 8	/	Counting flag		
		5 0	S	0 4 0 1	/	2 @ 29		
		5 1	T	0 2 1 3	/	<input checked="" type="checkbox"/> →	No y's	
		5 2	S	0 1 3 8	/		Form "n" quantity	
		5 3	X C	6 3 5 7	/	* flag		
		5 4	B	0 2 2 6	/	XZ6000	} Initialize	
		5 5	U	0 1 5 6	/	<input checked="" type="checkbox"/>		B()
		5 6	Y	0 0 2 8	/			M() ΣX
		5 7	Y	0 0 2 9	/		B()	
		5 8	Y	0 0 2 3	/			
		5 9	B	0 2 3 1	/	<input checked="" type="checkbox"/> 1 @ 29		
		6 0	X H	6 3 1 8	/	Δ for ΣX^2		
		6 1	H	0 1 2 3	/	X Ctr.		
		6 2	B	0 2 2 7	/	XZ3548		
		6 3	Y	0 0 3 4	/	<input checked="" type="checkbox"/> H() X_i		

PREPARED FOR: LGP-30, RPC-4000 USERS ORGANIZATION - POOL				PAGE 5 / 10
JOB NO.	PROGRAM NO. F2-122	PROGRAM PREPARED BY: R.A. Koenig	PROGRAM CHECKED BY: POOL Review	DATE 5-5-59
PROBLEM: Individual Correlation and Regression				TRACK 02

PROGRAM INPUT CODES	STOP	LOCATION	INSTRUCTION		STOP	CONTENTS OF ADDRESS	NOTES
			OPERATION	ADDRESS			
	/						
	/	0 2 0 0	B	0 2 2 9	/	XZ3536	
		0 1	U	0 2 0 2	/		
		0 2	Y	0 0 3 1	/	B() ΣX^2	
		0 3	B	0 2 2 5	/	XZ3544	
		0 4	U	0 2 0 5	/		
		0 5	Y	0 0 2 7	/	H() \bar{y}	
		0 6	X P	1 6 2 1	/	c.r.	
		0 7	U	0 2 0 8	/		
		0 8	B	0 1 2 3	/	X CTr.	
		0 9	R	0 2 4 2	/		} Print 2 characters
		1 0	U	0 1 0 8	/		
		1 1	R	0 0 6 1	/		} $\Sigma X, \bar{X}$ & s loop
		1 2	U	0 0 2 0	/		
		1 3	B	0 2 2 8	/	1 @ 29	Here: Done all $\Sigma, \bar{X}, & s$
		1 4	X P	1 6 0 0	/	c.r.	
		1 5	U	0 2 4 7	/		
		1 6	X Z	0 0 0 1	/	Delay & 1 @ 29	(0251,0244,0301,0444)
		1 7	X P	0 8 0 3	/	Upper Case	
		1 8	(		/	Delay & r @ 29	
		1 9	X P	1 0 0 5	/	*	
		2 0	(		/	Delay & p @ 29	
		2 1	X P	0 4 0 0	/	Lower Case	
		2 2	U	0 2 3 8	/	→	Enter space printing
0 0 0 0 0 0 0 9	/	2 3	4 0 0 0 0 0 0 0	/		1 @ 1	(0131)
		2 4	1 0 0	/		4 @ 25	(0116)
		2 5	2 3 6 0	/		(XZ3544)	(0203,0457)
		2 6	3 J 0 0	/		(XZ6000)	(0154,0460)
		2 7	2 3 J 0	/		(XZ3548)	(0451,0162)
		2 8	4	/		1 @ 29	(0049,0421,0213,0349,0363)
		2 9	2 3 9 0	/		(XZ3536)	(0200)
		3 0	2 8	/		10 @ 29	(0115,0109)
		3 1	4	/		1 @ 29	(0009,0052,0159)

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JOB NO.	PROGRAM NO. F2-122	PROGRAM PREPARED BY: R.A. Koenig	PROGRAM CHECKED BY: POOL Review	DATE: 5-5-59
PROBLEM: Individual Correlation and Regression				TRACK: 02

PROGRAM INPUT CODES	STOP	LOCATION	INSTRUCTION		STOP	CONTENTS OF ADDRESS	NOTES
			OPERATION	ADDRESS			
	/						
	/	0 2 3 2	B	0 2 4 7	/	1 @ 29	
		3 3	H	0 1 2 3	/	X Ctr	
		3 4	U	0 0 0 5	/		
		3 5	X P	0 2 0 0	/	⊗ "0"	Here: First Char.=0
		3 6	U	0 1 1 5	/		
		3 7	X P	0 3 0 2	/	Space	
		3 8	X Z	0 0 1 0	/	Delay & 10 @ 29	(0109)
		3 9	X P	0 3 0 4	/	⊗ Space	
		4 0	X Z	0 0 0 5	/	Delay	
		4 1	X P	0 3 0 6	/	Space	
		4 2	U	()	/	Exit from	2 Char. Print
		4 3	X H	6 3 2 4	/	⊗ X _i Ctr.	
		4 4	A	0 2 1 6	/	1 @ 29	
		4 5	X H	6 3 2 6	/	X _j Ctr.	
		4 6	U	0 2 6 0	/	→ Address initialization for corr.	
		4 7	X Z	0 0 0 1	/	⊗ Delay & 1 @ 29	(0232)
		4 8	U	0 2 4 3	/		
		4 9			/		
		5 0	X B	6 3 2 4	/	X _i Ctr.	
		5 1	A	0 2 1 6	/	⊗ 1 @ 29	
		5 2	X H	6 3 2 4	/	X _i Ctr.	
		5 3	A	0 1 2 5	/	1 @ 29	
		5 4	X H	6 3 2 6	/	X _j Ctr.	
		5 5	S	0 2 2 0	/	⊗ p @ 29	
		5 6	T	0 2 6 0	/	→ Not done X _i	
		5 7	X B	6 3 5 3	/	Finish flag: All done with X _i	
		5 8	T	()	/	Exit from Corr-regr.	
		5 9	U	0 1 0 5	/	⊗	
		6 0	B	0 2 2 0	/	p @ 29	
		6 1	X H	6 3 3 9	/	X _y flag set	pos.
		6 2	X H	6 3 4 1	/	Loop flag	
		6 3	U	0 4 4 2	/	⊗	

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JOB NO.	PROGRAM NO. F2-122	PROGRAM PREPARED BY: R.A. Koenig	PROGRAM CHECKED BY: POOL Review
PROBLEM: Individual Correlation and Regression			DATE 5-5-59
			TRACK 03

PROGRAM INPUT CODES	STOP	LOCATION	INSTRUCTION		STOP	CONTENTS OF ADDRESS	NOTES
			OPERATION	ADDRESS			
	/						
	/	<input checked="" type="checkbox"/>					
		0 3 0 0	B	0 3 1 7	/		
		0 1	A	0 2 1 6	/	1 @ 29	} $\Delta M() X_j$ $B()$
		0 2	Y	0 3 1 7	/		
		0 3	Y	0 3 3 9	/	<input checked="" type="checkbox"/>	
		0 4	B	0 1 1 9	/	32 @ 29	} $\Delta M() \Sigma X_j$
		0 5	A	0 3 2 1	/		
		0 6	Y	0 3 2 1	/		
		0 7	B	0 1 2 9	/	<input checked="" type="checkbox"/>	} $\Delta B() \Sigma X_i X_j$
		0 8	A	0 3 2 3	/		
		0 9	Y	0 3 2 3	/		
		1 0	U	0 4 0 5	/	→	Print i & j
		1 1	X H	6 3 5 7	/	<input checked="" type="checkbox"/>	*Flag Set *flag neg. for y variables
		1 2	U	0 4 1 2	/		
		1 3			/		
		1 4	X R	0 5 0 0	/		} Fl.Pt.
		1 5	X U	0 5 0 0	/	<input checked="" type="checkbox"/>	
		1 6	B	()	/	X_i	
		1 7	M	()	/	X_j	
		1 8	X R	0 0 0 0	/	$\sqrt{\quad}$	
		1 9	X H	6 3 1 4	/	<input checked="" type="checkbox"/>	$\sqrt{X_i X_j}$
		2 0	B	()	/	ΣX_i	
		2 1	M	()	/	ΣX_j	
		2 2	X H	6 3 1 7	/	$(\Sigma X_i)(\Sigma X_j)$	
		2 3	B	()	/	<input checked="" type="checkbox"/>	$\Sigma X_i X_j$
		2 4	X M	3 5 4 0	/	n	
		2 5	X S	6 3 1 7	/	$\Sigma X_i \Sigma X_j$	
		2 6	X H	6 3 1 7	/	X_{ij}	
		2 7	X D	6 3 1 4	/	<input checked="" type="checkbox"/>	$\sqrt{X_i X_j}$
		2 8	X P	0 0 0 0	/	r	r Corr. Coeff.
		2 9	X H	6 3 1 4	/	r	
		3 0	X M	6 3 1 4	/	r	
		3 1	X H	6 3 1 4	/	<input checked="" type="checkbox"/>	r^2

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JOB NO.	PROGRAM NO. F2-122	PROGRAM PREPARED BY: R.A. Koenig	PROGRAM CHECKED BY: POOL Review	DATE 5-5-59
PROBLEM: Individual Correlation and Regression				TRACK 03

PROGRAM INPUT CODES	STOP	LOCATION	INSTRUCTION		STOP	CONTENTS OF ADDRESS	NOTES
			OPERATION	ADDRESS			
	/						
	/	<input checked="" type="checkbox"/>					
		0 3 3 2	X B	6 3 1 7	/	X_{ij}	
		3 3	D (	)	/	X_i	
		3 4	X P	0 0 0 0	/	b	
		3 5	M ()	/	<input checked="" type="checkbox"/> $\bar{X}_i = b \bar{X}_j$	
		3 6	X Y	0 0 0 0	/		Change sign
		3 7	A (	)	/	\bar{X}_j	
		3 8	X P	0 0 0 0	/	a	
		3 9	B ()	/	<input checked="" type="checkbox"/> X_j	
		4 0	X D	3 5 4 0	/	n	
		4 1	X H	6 3 1 7	/	X_j/n	
		4 2	X M	6 3 1 4	/	r^2	
		4 3	X S	6 3 1 7	/	<input checked="" type="checkbox"/> $(r^2 - 1)(X_j/n)$	
		4 4	X Y	0 0 0 0	/		Change sign
		4 5	X D	3 5 4 2	/	(n-2)	
		4 6	X R	0 0 0 0	/	$\sqrt{\quad}$	
		4 7	X P	0 0 0 0	/	<input checked="" type="checkbox"/> Std. Deviation about regression	
		4 8	X E	0 0 0 0	/	Exit	
		4 9	B 0	2 2 8	/	1 @ 29	} $\Delta S(\quad) \bar{X}_j$
		5 0	A 0	3 3 7	/		
		5 1	Y 0	3 3 7	/	<input checked="" type="checkbox"/>	
		5 2	X B	6 3 2 6	/	X_j Ctr.	
		5 3	A 0	1 2 5	/	1 @ 29	
		5 4	X H	6 3 2 6	/	X_j Ctr.	
		5 5	X S	6 3 4 1	/	<input checked="" type="checkbox"/> p @ 29	Loop Flag
		5 6	T 0	3 0 0	/	→ Continue	Add. Modification
		5 7	U (	)	/	Exit	This corr.-regr. loop
		5 8	B 0	1 2 8	/	XZ6201	
		5 9	X A	6 3 2 4	/	<input checked="" type="checkbox"/> X_i Ctr.	
		6 0	S 0	1 2 5	/	1 @ 29	
		6 1	Y 0	3 3 3	/	$O(\quad) X_i$	
		6 2	Y 0	3 1 6	/	$B(\quad) X_i$	
		6 3	A 0	2 2 8	/	<input checked="" type="checkbox"/> 1 @ 29	

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JOB NO.	PROGRAM NO. F2-122	PROGRAM PREPARED BY: R.A. Koenig	PROGRAM CHECKED BY: POOL Review	DATE 5-5-59
PROBLEM: Individual Correlation and Regression				TRACK 04

PROGRAM INPUT CODES	STOP	LOCATION	INSTRUCTION		STOP	CONTENTS OF ADDRESS	NOTES
			OPERATION	ADDRESS			
	/						
	/	<input checked="" type="checkbox"/>					
		0 4 0 0	U	0 4 0 2	/		
		0 1	X	Z 0 0 0 2	/	2 @ 29	(0150, 0447)
		0 2	Y	0 3 1 7	/	} Initialize M() X _j B() X _j	
		0 3	Y	0 3 3 9	/		<input checked="" type="checkbox"/>
		0 4	U	0 4 1 8	/		
		0 5	X	P 1 6 2 0	/	C.R.	
		0 6	X	B 6 3 2 4	/	X _i Ctr.	
		0 7	X	H 6 3 5 7	/	<input checked="" type="checkbox"/>	Flag
		0 8	R	0 2 4 2	/	} Print 2 Char.	
		0 9	U	0 1 0 8	/		
		1 0	X	B 6 3 3 9	/	X,y Flag	
		1 1	T	0 3 1 1	/	<input checked="" type="checkbox"/>	→ This is y variable
		1 2	X	B 6 3 2 6	/	X _j Ctr.	
		1 3	X	Z 0 0 3 2	/	Delay & 32 @ 29	(0427)
		1 4	R	0 2 4 2	/	} Print 2 Characters	
		1 5	U	0 1 0 9	/		<input checked="" type="checkbox"/>
		1 6	U	0 3 1 4	/		
		1 7	X	Z 3 6 0 0	/		(0425)
		1 8	X	B 6 3 2 4	/	X _i Ctr.	
		1 9	A	0 4 3 4	/	<input checked="" type="checkbox"/>	(XZ6232)
		2 0	Y	0 3 3 5	/	M() \bar{X}_i	
		2 1	A	0 2 2 8	/	1 @ 29	
		2 2	Y	0 3 3 7	/	A() \bar{X}_j	
		2 3	X	B 6 3 2 4	/	<input checked="" type="checkbox"/>	X _i Ctr.
		2 4	N	0 4 4 1	/	32 @ 31	
		2 5	A	0 4 1 7	/	XZ3600	
		2 6	Y	0 3 2 0	/	B() $\sum X_i$	
		2 7	A	0 4 1 3	/	<input checked="" type="checkbox"/>	32 @ 29
		2 8	U	0 4 3 5	/		
		2 9	B	0 1 0 8	/	1 @ 29	
		3 0	X	H 6 3 2 6	/	X _j Ctr.	
		3 1	R	0 3 5 7	/	<input checked="" type="checkbox"/>	Loop X _i Y _j

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JOB NO.	PROGRAM NO. F2-122	PROGRAM PREPARED BY: R.A. Koenig	PROGRAM CHECKED BY: POOL Review	DATE 5-5-59	
PROBLEM: Individual Correlation and Regression				TRACK 04	

PROGRAM INPUT CODES	STOR	LOCATION	INSTRUCTION		STOR	CONTENTS OF ADDRESS	NOTES
			OPERATION	ADDRESS			
		<input checked="" type="checkbox"/>					
		0 4 3 2	U	0 4 0 5			
		3 3	U	0 2 5 0		→	to ΔX _i
		3 4	X Z	6 2 3 2			(0419)
		3 5	Y	0 3 2 1	<input checked="" type="checkbox"/>	M() ΣX _j	
		3 6	X A	6 3 2 4		X _i Ctr.	
		3 7	Y	0 3 2 3		B() ΣX _i X _j	
		3 8	X B	6 3 5 3		Finish Flag	
		3 9	T	0 4 4 4	<input checked="" type="checkbox"/>	→	This is last X
		4 0	U	0 4 0 5		→	Print 2 Characters
		4 1	X Z	0 0 0 8		32 @ 31	(0424)
		4 2	R	0 3 5 7		} Corr. Reg. Loop	
		4 3	U	0 3 5 8	<input checked="" type="checkbox"/>		
		4 4	B	0 2 1 6		1 @ 29	X _j 's completed for this X _i Start y's
		4 5	A	0 2 1 8		r @ 29	
		4 6	X H	6 3 4 1		Loop Flag	
		4 7	S	0 4 0 1	<input checked="" type="checkbox"/>	2 @ 29	
		4 8	T	0 2 4 9		→	No y's
		4 9	S	0 3 3 5		Large Pos No.	
		5 0	X H	6 3 3 9		*Flag	
		5 1	B	0 2 2 7	<input checked="" type="checkbox"/>	XZ3548	} Init. B() X _j B()
		5 2	Y	0 3 1 7			
		5 3	Y	0 3 3 9			
		5 4	B	0 2 2 6		XZ6000	
		5 5	U	0 4 5 6	<input checked="" type="checkbox"/>		
		5 6	Y	0 3 2 1		M() ΣX _j	
		5 7	B	0 2 2 5		XZ3544	
		5 8	Y	0 3 3 7		A() X̄ _j	
		5 9	X B	6 3 2 4	<input checked="" type="checkbox"/>	X _i Ctr.	
		6 0	A	0 2 2 6		XZ6000	
		6 1	Y	0 3 2 3		B() ΣX _i X _j	
		6 2	U	0 4 2 9			
		6 3	X Z	0 4 0 1	<input checked="" type="checkbox"/>	257 @ 29	(0133)

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Division (5)

F2-122

MULTIPLE REGRESSION 2 - Floating Point

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JOB NO.	PROGRAM NO. F2-122	PROGRAM PREPARED BY: R.A. Koenig	PROGRAM CHECKED BY: POOL Review	DATE 5/14/59
PROBLEM: Matrix Assembly			TRACK 00	

PROGRAM INPUT CODES	STOP	LOCATION	INSTRUCTION		STOP	CONTENTS OF ADDRESS	NOTES
			OPERATION	ADDRESS			
; 000 2600	/						
/ 000 2600	/	<input checked="" type="checkbox"/>					
		0,0,0,0	B	0,0,0,6	/	8000000	Test word Enter Here
		0,1	x P	6,3,1,6	/	Dummy Print	
		0,2	x I	0,0,0,0	/	Shift left	
		0,3	T	0,4,5,6	/	<input checked="" type="checkbox"/> → 4-bit	Mode
		0,4	B	0,0,2,6	/	XP3300	Here 6-bit down
		0,5	U	0,1,2,3	/		
, 000 0012	/	0,6	8,0,0	0,0,0,0	/		
		0,7	[/	<input checked="" type="checkbox"/> p at 29	(0235,0242,0452)
		0,8		1,8	/	6 at 29	(0029)
		0,9		2,3,8,0	/	XZ3532	(0157)
		1,0		4	/	1 at 29	(0031)
		1,1		4	/	<input checked="" type="checkbox"/> 1 at 29	(0160,0232,0239,0262)
		1,2	[		/	n at 29	(0147,0133)
		1,3	C	3,W,W,J	/	Dump	
		1,4	C	[	/	C ₁	
		1,5	C	[/	<input checked="" type="checkbox"/> C ₂	
		1,6	C	[	/	C ₃	
		1,7	C	[	/	C ₄	
		1,8	U	0,0,2,8	/		
		1,9	x Z	0,0,0,1	/	<input checked="" type="checkbox"/>	
		2,0	x R	0,5,0,0	/	} Store F.P.	"1" in 3552
		2,1	x U	0,5,0,0	/		
		2,2	x H	3,5,5,2	/		
		2,3	U	0,4,4,4	/	<input checked="" type="checkbox"/>	
		2,4	[		/	Read Ctr	(0209,0211,0152)
		2,5	x Z	0,0,0,3	/	3 at 29	(0039)
		2,6	x P	3,3,0,0	/	Dummy Print	"p" (0004)
		2,7			/	<input checked="" type="checkbox"/>	
		2,8	B	0,0,1,4	/	C ₁	
		2,9	A	0,0,0,8	/	6 at 29	
		3,0	Y	0,0,1,6	/	C ₃	
		3,1	S	0,0,1,0	/	<input checked="" type="checkbox"/> 1 at 29	

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JOB NO.	PROGRAM NO. F2-122	PROGRAM PREPARED BY: R.A. Koenig	PROGRAM CHECKED BY: POOL Review	DATE 5/14/59	
PROBLEM: Matrix Assembly				TRACK 00	

PROGRAM INPUT CODES	STOP	LOCATION	INSTRUCTION		STOP	CONTENTS OF ADDRESS	NOTES
			OPERATION	ADDRESS			
	/						
	/	<input checked="" type="checkbox"/>					
		0,0,3,2	U	0036	/		
		3,3	xZ	0001	/	1 at 29	(0261)
		3,4			/		
		3,5	xC	6300	/	<input checked="" type="checkbox"/> Lf + 1 for	clear (0106)
		3,6	Y	0015	/	C ₂	
		3,7	A	0459	/	2 at 29	
		3,8	Y	0017	/	C ₄	
		3,9	S	0025	/	<input checked="" type="checkbox"/> 3 at 29	
		4,0	U	0042	/		
		4,1	xZ	0003	/	3 at 29	(0142)
		4,2	Y	0014	/	C ₁	
		4,3	xS	6301	/	<input checked="" type="checkbox"/> XC[Lf+1]	
		4,4	T	0013	/	→ Continue clearing	
		4,5	U	0000	/	→ End of clear - Read data	
		4,6	A	0461	/	2 at 29	
		4,7	U	0030	/	<input checked="" type="checkbox"/> Enter "Clear" here	
		4,8	[]		/	p at 29	(0333,0104)
		4,9	xR	0500	/	} F.P.	
		5,0	xU	0500	/	}	
		5,1	B	[]	/	<input checked="" type="checkbox"/> X _i	
		5,2	M	[]	/	X _j	
		5,3	A	[]	/	ΣX _i X _j	
		5,4	H	[]	/	ΣX _i X _j	
		5,5	H	[]	/	<input checked="" type="checkbox"/> ΣX _j X _i	
		5,6	E	0232	/		
		5,7	xZ	0001	/	1 at 29	(0421)
		5,8	xP	0300	/	"Space"	
		5,9	xZ	0000	/	<input checked="" type="checkbox"/> delay	
		6,0	xP	0000	/	Read code word	
		6,1	xI	0000	/		
		6,2	N	0113	/	1 at 30	
		6,3	xR	1158	/	<input checked="" type="checkbox"/> 6 bit binarize	

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JOB NO.	PROGRAM NO. F2-122	PROGRAM PREPARED BY: R.A. Koenig	PROGRAM CHECKED BY: POOL Review	DATE 5/14/59
PROBLEM: Matrix Assembly			TRACK 01	

PROGRAM INPUT CODES	STOP	LOCATION	INSTRUCTION		STOP	CONTENTS OF ADDRESS	NOTES
			OPERATION	ADDRESS			
	/						
	/	X					
		0100	xU	1119		} 6 bit Bin.	at 28
		01	M	0114		1 at 1	
		02	U	[]		Exit from code word read	
		03	C	0120	X	Enter	" " "
		04	xP	1619		C.R.	
		05	U	0119			
		06	B	0035		XC6300	Enter Here
		07	xH	6301	X	Flag for clear	
		08	B	0261		XZ3532	Lo for clear
		09	U	0046		→ To clear	
		10					
,0000010	'	11		474	X	285 at 29	(0143)
		12	8	1900		P2500	(0134)
		13		2		1 at 30	(0062)
		14	4000	0000		1 at 1	(0101,0436)
		15	[]		X	N ctr	(0150,0429)
		16	[]			p at 29	(0151)
		17	[]			r at 29	(0159)
		18	[]			P ctr. 2	(0246,0330,0332,0340)
		19		84	X	32 at 29	(0447)
		20	[]			Print code word clear	
		21	U	0057			
		22					
		23	R	0102	X	} Read p	at 29
		24	U	0103			
		25	H	0116			
		26	H	0048		} Store p	at 29
		27	C	0007	X		
		28	B	0300		XPL300	
		29	U	0130			
		30	R	0102		} Read r	at 29
		31	U	0103	X		

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JOB NO.	PROGRAM NO. F2-122	PROGRAM PREPARED BY: R.A. Koenig	PROGRAM CHECKED BY: POOL Review	DATE: 5/14/59
PROBLEM: Matrix Assembly				TRACK 01

PROGRAM INPUT CODES	STOP	LOCATION	INSTRUCTION		STOP	CONTENTS OF ADDRESS	NOTES
			OPERATION	ADDRESS			
		0 1 3 2	H	0 4 0 2		} Store r at 29	
		3 3	C	0 1 1 7		}	
		3 4	B	0 1 1 2		XP2500 "n"	
		3 5	U	0 1 3 7		☒	
		3 6					
		3 7	R	0 1 0 2		} Read n at 29	
		3 8	U	0 1 0 3		}	
		3 9	H	0 2 1 8		☒ } Store n at 29	
		4 0	H	0 0 1 2		}	
		4 1	x H	0 5 4 2		F.P. Acc	
		4 2	x R	0 5 0 0		}	
		4 3	B	0 1 1 1		☒ } "Float" n and store in 3540	
		4 4	x U	0 7 1 2		}	
		4 5	x H	3 5 4 0		}	
		4 6	E	0 1 4 7		Exit Fl. Pt.	
		4 7	B	0 0 1 2		☒ n at 29	
		4 8	S	0 3 6 3		l at 29	
		4 9	T	0 4 3 3		→ All data in	
		5 0	C	0 1 1 5		N Ctr.	
		5 1	B	0 1 1 6		☒ p at 29	
		5 2	H	0 0 2 4		Read Ctr.	
		5 3	B	0 4 0 4		XZ6200 Lo Read X	
		5 4	R	0 2 1 2		} Read loop for X	
		5 5	U	0 2 0 3		☒ }	
		5 6	U	0 1 5 7			
		5 7	B	0 0 0 9		XZ3532 Lo read y	
		5 8	Y	0 2 1 6		I[]	
		5 9	B	0 1 1 7		☒ r at 29	
		6 0	U	0 1 6 1			
		6 1	R	0 2 1 2		} Read loop for y	
		6 2	U	0 2 1 0		}	
		6 3	U	0 2 0 5		☒ → Sum of squares & Cross Products	

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JOB NO.	PROGRAM NO. F2-122	PROGRAM PREPARED BY R.A. Koenig	PROGRAM CHECKED BY: POOL Review	DATE 5/14/59
PROBLEM: Matrix Assembly			TRACK 02	

PROGRAM INPUT CODES	STOP	LOCATION	INSTRUCTION		STOP	CONTENTS OF ADDRESS	NOTES
			OPERATION	ADDRESS			
		0 2 0 0	[]			I Ctr	(0449,0451,0435)
		0 1	B	0 2 1 6			} Δ I []
		0 2	A	0 4 3 1		l at 29	
		0 3	Y	0 2 1 6			
		0 4	U	0 2 0 9			
		0 5	x,C	6 3 5 5		Dump	Here: for assembly of line
		0 6	C	0 2 5 6		i Ctr	
		0 7	C	0 2 5 5		j Ctr	
		0 8	U	0 2 2 0		→ Enter assembly	
		0 9	B	0 0 2 4		Read Ctr	
		1 0	S	0 2 6 0		l at 29	
		1 1	H	0 0 2 4		Read Ctr	
		1 2	T	[]		Read Loop	Exit
		1 3	U	0 2 1 4			
		1 4	x,R	0 5 0 0		} Read one number in F.P.	
		1 5	x,U	0 5 0 0			
		1 6	I	[]			
		1 7	E	0 2 0 1			
		1 8	[]				
		1 9	x,Z	0 0 3 2		32 at 29	(0304)
		2 0	B	0 2 5 6		i Ctr	} Generate add. Diag. element
		2 1	N	0 2 5 7		33 at 30	
		2 2	M	0 2 5 8		l at 1	
		2 3	A	0 2 5 9		XZ3600	
		2 4	Y	0 0 5 3		A []	} Initialize Cross-Prod. Loop
		2 5	Y	0 0 5 4		H []	
		2 6	Y	0 0 5 5		H []	
		2 7	B	0 2 5 6		i ctr	
		2 8	A	0 4 0 7		XZ6200	Lo X Data
		2 9	Y	0 0 5 1		B []	
		3 0	Y	0 0 5 2		M []	
		3 1	U	0 0 4 9			

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JOB NO.	PROGRAM NO. F2-122	PROGRAM PREPARED BY: R.A. Koenig	PROGRAM CHECKED BY: POOL Review	DATE 5/14/59
PROBLEM: Matrix Assembly				TRACK 02

PROGRAM INPUT CODES	STOP	LOCATION	INSTRUCTION		STOP	CONTENTS OF ADDRESS	NOTES
			OPERATION	ADDRESS			
	/						
	/	0 2 3 2	B	0 0 1 1		1 at 29	} Δ j Ctr
		3 3	A	0 2 5 5		j Ctr	
		3 4	H	0 2 5 5			
		3 5	S	0 0 0 7	/	⊗ p at 29	
		3 6	T	0 2 6 2	/	→ not done with X _j	
		3 7	U	0 2 3 8	/		
		3 8	B	0 2 5 6	/	i Ctr	
		3 9	A	0 0 1 1	/	⊗ 1 at 29	
		4 0	H	0 2 5 5	/	j Ctr	
		4 1	H	0 2 5 6	/	i Ctr	
		4 2	S	0 0 0 7	/	p at 29	
		4 3	T	0 2 2 0	/	⊗ → not done X _j	
		4 4	X C	6 3 0 2	/	Dump	
		4 5	C	0 4 0 1	/	R Ctr 2	
		4 6	C	0 1 1 8	/	P Ctr 2	
		4 7	U	0 3 1 3	/	⊗	
		4 8	X R	0 5 0 0	/		} Fl. Pt.
		4 9	X U	0 5 0 0	/		
		5 0	B	[]	/	X _j	} Form X'y vector
		5 1	M	[]	/	⊗ y	
		5 2	A	[]	/	X'y	
		5 3	H	[]	/		
		5 4	E	0 3 3 0	/		
, 0 0 0	0 0 0 7	5 5	[]	[]	/	⊗ j Ctr	(0233,0234,0207)
		5 6	[]	[]	/	i Ctr	(0241,0227,0220)
		5 7		4,2	/	33 at 30	(0221)
		5 8	4 0 0 0	0 0 0 0	/	1 at 1	(0222)
		5 9		2 4 0 0	/	⊗ X23600	(0223)
		6 0		4	/	1 at 29	(0210,0331)
		6 1		2 3 8 0	/	X23532	
		6 2	B	0 0 1 1	/	1 at 29	
		6 3	U	0 3 0 2	/	⊗	

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JOB NO.	PROGRAM NO. F2-122	PROGRAM PREPARED BY: R.A. Koenig	PROGRAM CHECKED BY: POOL Review	DATE 5/14/59
PROBLEM: Matrix Assembly			TRACK 03	

PROGRAM INPUT CODES	STOP	LOCATION	INSTRUCTION		STOP	CONTENTS OF ADDRESS	NOTES
			OPERATION	ADDRESS			
		0300	x P	1300		Dummy r print (0128)	
		01	x Z	6000			(0336)
		02	A	0052		} Δ M[] Xj	
		03	Y	0052	☒		
		04	B	0219		32 at 29	} Δ H[] XjXi
		05	A	0055			
		06	Y	0055			
		07	B	0053	☒		} Δ A[] ΣXiXj
		08	A	0358			
		09	U	0310			
		10	Y	0053			
		11	Y	0054	☒		
		12	U	0049		→ Continue in cross product loop	
		13	B	0356		XZ6200	} Initialize
		14	Y	0250			
		15	B	0401	☒	r Ctr. 2	} X'y vector
		16	A	0359		XZ3532 Lo y storage	
		17	Y	0251			} loop
		18	B	0401		r ctr. 2	
		19	N	0427	☒	32 at 31	
		20	U	0336			
		21	B	0252			} Δ A[] X'y
		22	A	0358		1 at 29	
		23	Y	0252	☒		H[]
		24	Y	0253			
		25	U	0326			
		26	B	0250			} Δ B[] Xi
		27	A	0363	☒	1 at 29	
		28	Y	0250			
		29	U	0248		→ Cross-product loop	
		30	B	0118		p ctr. 2	
		31	A	0260	☒	1 at 29	

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JOB NO.	PROGRAM NO. F2-122	PROGRAM PREPARED BY: R.A. Koenig	PROGRAM CHECKED BY: POOL Review	DATE 5/14/59
PROBLEM: Matrix assembly				TRACK 03

PROGRAM INPUT CODES	STOP	LOCATION	INSTRUCTION		STOP	CONTENTS OF ADDRESS	NOTES
			OPERATION	ADDRESS			
	/						
	/	<input checked="" type="checkbox"/>					
		0,3,3,2	H	Q 1,1,8	/	p Ctr 2	
		3,3	S	Q 0,4,8	/	p at 29	
		3,4	T	Q 3,2,1	/	→ not done	X'y this y
		3,5	U	Q 3,4,0	/	<input checked="" type="checkbox"/> Here done	this X'y
		3,6	A	Q 3,0,1	/	XZ6000	
		3,7	Y	Q 2,5,2	/		} Initialize A[] H[] X'y
		3,8	Y	Q 2,5,3	/		
		3,9	U	Q 2,4,8	/	<input checked="" type="checkbox"/>	
		4,0	C	Q 1,1,8	/	p Ctr 2	
		4,1	B	Q 3,6,3	/	l at 29	} Ar Ctr 2
		4,2	A	Q 4,0,1	/		
		4,3	H	Q 4,0,1	/	<input checked="" type="checkbox"/>	
		4,4	S	Q 4,0,2	/	r at 29	
		4,5	T	Q 3,1,3	/	→ not done all	X'y
		4,6	B	Q 4,0,2	/	r at 29	Start Zy ²
		4,7	H	Q 4,0,6	/	<input checked="" type="checkbox"/> r Ctr 3	
		4,8	U	Q 4,1,4	/		
		4,9	X,R	Q 5,0,0	/	} Fl.Pt.	
		5,0	X,U	Q 5,0,0	/		
		5,1	B	[]	/	<input checked="" type="checkbox"/> y	} Form Zy ²
		5,2	M	[]	/	y	
		5,3	A	[]	/	} Zy ²	
		5,4	H	[]	/		
		5,5	E	Q 4,1,1	/	<input checked="" type="checkbox"/>	
,000	0,0,1,8	5,6		3,0,0,0	/	XZ6200	(0313)
		5,7			/		
		5,8		4	/	l at 29	(0301,0322)
		5,9		2,3,8,0	/	<input checked="" type="checkbox"/> XZ3532	(0316)
		6,0			/		
		6,1			/		
		6,2	J	3,0,0,0	/	XH4800	(0433)
		6,3		4	/	<input checked="" type="checkbox"/> l at 29	(0148,0341,0327)

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JOB NO.	PROGRAM NO. F2-122	PROGRAM PREPARED BY: R.A. Koenig	PROGRAM CHECKED BY: POOL Review	DATE 5/14/59
PROBLEM: Matrix Assembly				TRACK 04

PROGRAM INPUT CODES	STOP	LOCATION	INSTRUCTION		STOP	CONTENTS OF ADDRESS	NOTES
			OPERATION	ADDRESS			
	/						
	/	X					
		0,4,0,0		2 3 8 0	/	(XZ3532)	(0414)
		0 1	[		/	R Ctr 2	(0245,0315,0342,0343)
		0 2	[		/	r at 29	(0144,0344,0346)
		0 3		1 0	/	X 4 at 29	(0417)
		0 4		3,0,0 0	/	XZ 6200	(0153)
		0 5			/		
		0 6	[		/	r ctr 3	(0420,0422)
		0 7		3,0,0 0	/	X (XZ6200)	(0228)
		0 8		4	/	delay and	1 at 29 (0450)
		0 9		0	/	stop: 6 bit	not down
		1 0	U	0,0,0 0	/	→ Return to	6-bit test
		1 1	B	0,3,5 4	/	X H[] Σy^2	
		1 2	S	0,0,4 1	/	3 at 29	
		1 3	U	0,4,1 5	/		
		1 4	B	0,4,0 0	/	XZ 3532	
		1 5	Y	0,3,5 1	/	X } B[] y	
		1 6	Y	0,3,5 2	/	} M[]	
		1 7	A	0,4,0 3	/	4 at 29	
		1 8	Y	0,3,5 4	/	} A[] Σy^2	
		1 9	Y	0,3,5 3	/	X } H[]	
		2 0	B	0,4,0 6	/	r Ctr. 3	
		2 1	S	0,0,5 7	/	1 at 29	
		2 2	H	0,4,0 6	/	r ctr. 3	
		2 3	T	0,4,2 9	/	X → done computing Σy^2	
		2 4	U	0,3,4 9	/	Continue with Σy^2	
		2 5			/		
		2 6			/		
		2 7	x Z	0,0,0 8	/	X 32 at 31	
		2 8			/		
		2 9	B	0,1,1 5	/	N ctr	
		3 0	U	0,1,4 8	/		
		3 1	x Z	0,0,0 1	/	X 1 at 29	(0202)

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CARRIAGE RETURN

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JOB NO.	PROGRAM NO. F2-122	PROGRAM PREPARED BY: R.A. Koenig	PROGRAM CHECKED BY: POOL Review	DATE 5/14/59
PROBLEM: Matrix Assembly				TRACK 04

PROGRAM INPUT CODES	STOP	LOCATION	INSTRUCTION		STOP	CONTENTS OF ADDRESS	NOTES
			OPERATION	ADDRESS			
	/						
	/	0,4,3,2	XZ	0,4,0,1	/	257 at 29	
		3,3	B	0,3,6,2	/	XH4800	Here: Construct I
		3,4	C	0,4,4,4	/	Set up Initial Hold for I	
		3,5	C	0,2,0,0	/	<input checked="" type="checkbox"/> I Ctr	
		3,6	B	0,1,1,4	/	1 at 1	
		3,7	XH	0,5,4,2	/	Fl.Pt. Acc.	
		3,8	B	0,4,3,2	/	257 at 29	
		3,9	XH	0,5,4,1	/	<input checked="" type="checkbox"/> Exp Acc.	
		4,0	U	0,0,2,0	/	Store 1 in 3540	
		4,1			/		
		4,2	XR	0,5,0,0	/		} Store 1 in diagonal locations of I
		4,3	XU	0,5,0,0	/	<input checked="" type="checkbox"/>	
		4,4	[H]		/		
		4,5	XE	0,0,0,0	/		} ΔH[]
		4,6	B	0,4,4,4	/		
		4,7	A	0,1,1,9	/	<input checked="" type="checkbox"/> 1 at 29	
		4,8	Y	0,4,4,4	/		
		4,9	B	0,2,0,0	/	I Ctr	
		5,0	A	0,4,0,8	/	1 at 29	
		5,1	H	0,2,0,0	/	<input checked="" type="checkbox"/> I Ctr	
		5,2	S	0,0,0,7	/	p at 29	
		5,3	T	0,4,4,2	/	→ Not done W/I	
		5,4	U	[, ,]	/	"R" Here Exit from Matrix Assem.	
		5,5			/	<input checked="" type="checkbox"/>	
		5,6	XP	1,6,0,7	/	c.r.	Here: 4-bit mode
		5,7	xZ	0,0,0,8	/	Delay	
		5,8	XP	2,6,0,9	/	"6"	
		5,9	XZ	0,0,0,2	/	<input checked="" type="checkbox"/> Delay and 2 at 29	(0037)
		6,0	XP	0,7,0,0	/	"_"	
		6,1	XZ	0,0,0,2	/	Delay and 2 at 29	(0046)
		6,2	XP	0,5,1,3	/	"b"	
		6,3	U	0,4,0,8	/	<input checked="" type="checkbox"/> → to Stop	

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MULTIPLE REGRESSION 2 - Floating Point

F2-122

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JOB NO.	PROGRAM NO. F2-122	PROGRAM PREPARED BY: R.A. Koenig	PROGRAM CHECKED BY: POOL Review	DATE 02/09/59
PROBLEM: Inversion and Solution			TRACK 00	

PROGRAM INPUT CODES	STOP	LOCATION	INSTRUCTION		STOP	CONTENTS OF ADDRESS	NOTES
			OPERATION	ADDRESS			
; 0 0 0 | 3 1 0 0	/						
/, 0 0 0 | 3 1 0 0	/	<input checked="" type="checkbox"/>					
		0 0 0 0	H	0 2 4 1	/	} Enter Here:	p at 29 in acc.
		0 0 1	H	0 0 1 6	/		
		0 0 2	U	0 0 0 3	/		Store p at 29
		0 0 3	C	0 4 2 5	/	<input checked="" type="checkbox"/>	
		0 0 4	C	0 1 4 7	/		Row no.
		0 0 5	U	0 4 2 6	/		
		0 0 6	[		/		Col ctr. (0053,0055)
		0 0 7	x,H	6 0 0 0	/	<input checked="" type="checkbox"/>	(0335,0121)
		0 0 8	Y	0 0 4 4	/		B[] & Pivot Element
		0 0 9	B	[]	/		Fr. of pivot element
		1 0 0	T	0 0 3 5	/		→ Fr. ok
		1 1 0	S	0 3 3 3	/	<input checked="" type="checkbox"/>	1 at 29
		1 1 2	T	0 4 1 0	/		Pivot = 0: No inversion -X'X Sing.
		1 1 3	U	0 0 3 5	/		→ Fr. ok
		1 1 4	x,Z	0 0 3 2	/		32 at 29 (0128,0428)
		1 1 5	[/	<input checked="" type="checkbox"/>	Add 1st L.E. (0140,0150)
		1 1 6	[		/		p at 29 (0030,0101,0237)
		1 1 7	x,Z	0 0 0 1	/		1 at 29 Stop: X'X Sing.
		1 1 8	B	0 1 4 7	/		Row No.
		1 1 9	N	0 2 5 8	/	<input checked="" type="checkbox"/>	33 at 30
		2 0 0	M	0 2 5 9	/		1 at 1
		2 0 1	A	0 1 0 7	/		XZ3600
		2 0 2	Y	0 0 3 7	/		B[]
		2 0 3	Y	0 0 0 9	/	<input checked="" type="checkbox"/>	B[]
		2 0 4	Y	0 0 4 6	/		H[]
		2 0 5	U	0 0 0 8	/		
		2 0 6	R	0 0 5 5	/		} Pivot Row Divide for X'X
		2 0 7	U	0 0 3 0	/	<input checked="" type="checkbox"/>	
		2 0 8	B	0 1 4 7	/		Row no.
		2 0 9	U	0 1 0 2	/		
		3 0 0	B	0 0 1 6	/		p at 29
		3 0 1	S	0 0 1 7	/	<input checked="" type="checkbox"/>	1 at 29

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CARRIAGE RETURN

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JOB NO.	PROGRAM NO. F2-122	PROGRAM PREPARED BY: R.A. Koenig	PROGRAM CHECKED BY: POOL Review	DATE 02/09/59
PROBLEM: Inversion and Solution			TRACK 00	

PROGRAM INPUT CODES	STOP	LOCATION	INSTRUCTION		STOP	CONTENTS OF ADDRESS	NOTES	
			OPERATION	ADDRESS				
	/							
	/	0032	S	0147	/	Row. No.		
		33	H	0205	/	Ctr. 1		
		34	U	0042	/			
		35	xR	0500	/	} F.P.		
		36	xU	0500	/			
		37	B	[]	/	} Store Pivot Element in 6314		
		38	xH	6314	/			
		39	E	[]	/	} Exit to ANOVA		
		40			/			
		41	xZ	4800	/	(0105)		
		42	xR	0500	/	} Divide Pivot row by pivot element		
		43	xU	0500	/			
		44	B	[]	/			
		45	xD	6314	/			
		46	H	[]	/			
		47	E	0052	/			
, 000 00004	/	48		4	/	1 at 29	(0133,0162,0419)	
		49		80	/	32 at 29	(0406)	
		50	WWW	WWWJ	/	-1 at 29	(0100)	
		51			/			
		52	B	0205	/	Ctr. 1		
		53	S	0332	/	1 at 29		
		54	H	0205	/	Ctr. 1		
		55	T	[]	/	Exit Pivot	Row Divide	
		56	B	0044	/	B[]	} Δ Pivot Row Element Add.	
		57	A	0329	/	1 at 29		
		58	Y	0044	/	B[]		
		59	U	0060	/			
		60	Y	0046	/	H[]		
		61	U	0042	/			
		62			/			
		63			/			

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JOB NO.	PROGRAM NO. F2-122	PROGRAM PREPARED BY: R.A. Koenig	PROGRAM CHECKED BY: POOL Review	DATE 02/09/59
PROBLEM: Inversion and Solution			TRACK 01	

PROGRAM INPUT CODES	STOP	LOCATION	INSTRUCTION		STOP	CONTENTS OF ADDRESS	NOTES
			OPERATION	ADDRESS			
	/						
	/	0100	B	0050	/	-1 at 29	
		01	A	0016	/	p at 29	
		02	xH	6317	/	Temp (p-1) or row no.	
		03	B	0232	/	<input checked="" type="checkbox"/> 32 at 31	
		04	N	0147	/	row no.	
		05	A	0041	/	XZ4800	
		06	U	0108	/		
		07	xZ	3600	/	<input checked="" type="checkbox"/>	
		08	Y	0044	/	B[]	
		09	U	0110	/		
		10	Y	0046	/	H[]	
		11	xB	6317	/	<input checked="" type="checkbox"/> Row No. or p at 29	
		12	R	0055	/	} Pivot row divide for I	
		13	U	0033	/		
		14	U	0115	/	Done: I Pivot row div.	
		15	B	0230	/	<input checked="" type="checkbox"/> r at 29	
		16	S	0402	/	l at 29	
		17	H	0263	/	R Ctr. 1	
		18	B	0147	/	Row No. 3	
		19	U	0121	/	<input checked="" type="checkbox"/>	
		20			/		
		21	A	0007	/	XZ6000	
		22	Y	0044	/	B[]	
		23	U	0124	/	<input checked="" type="checkbox"/>	
		24	Y	0046	/	H[]	
		25	xC	6340	/	Dump Acc.	
		26	R	0055	/	} Pivot row div. for x'y	
		27	U	0033	/	<input checked="" type="checkbox"/>	
		28	B	0014	/	32 at 29	} Δ Pivot Row
		29	A	0044	/	B[]	} Add by 32
		30	Y	0044	/	B[]	} in X'y
		31	Y	0046	/	<input checked="" type="checkbox"/> H[]	

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JOB NO.	PROGRAM NO. F2-122	PROGRAM PREPARED BY: R.A. Koenig	PROGRAM CHECKED BY: POOL Reivew	DATE 02/09/59	
PROBLEM: Inversion and Solution				TRACK 01	

PROGRAM INPUT CODES	STOP	LOCATION	INSTRUCTION		STOP	CONTENTS OF ADDRESS	NOTES
			OPERATION	ADDRESS			
	/						
	/	<input checked="" type="checkbox"/>					
		0 1 3 2	B	0 2 6 3	/	R ctr. 1	
		3 3	S	0 0 4 8	/	1 at 29	
		3 4	H	0 2 6 3	/	R ctr. 1	
		3 5	T	0 1 3 8	/	<input checked="" type="checkbox"/> → All X'y Div. Completed	
		3 6	U	0 1 2 5	/	→ More X'y to do	
		3 7			/		
		3 8	B	0 1 4 7	/	Row no. Here: start transf. of non-pivot rows	
		3 9	A	0 2 0 4	/	<input checked="" type="checkbox"/> xz3600	
		4 0	C	0 0 1 5	/	Address 1st leading element	
		4 1	C	0 2 2 0	/	Ctr. 2	
		4 2	U	0 1 4 3	/		
		4 3	B	0 2 0 1	/	<input checked="" type="checkbox"/> xz6363	
		4 4	E	0 0 0 9	/	Save add. portion of pivot element	
		4 5	H	0 2 3 1	/	Pivot element address	
		4 6	U	0 1 4 8	/		
		4 7	[/	<input checked="" type="checkbox"/> row no at 29 (0361, 0318, 0018, 0032, 0104, 0118, 0138, 0304, 0311, 0325, 0359)	
		4 8	B	0 2 2 0	/	ctr. 2	
		4 9	N	0 3 2 8	/	32 at 31	
		5 0	A	0 0 1 5	/	add 1st leading element	
		5 1	U	0 2 0 7	/	<input checked="" type="checkbox"/>	
		5 2	[		/	transf. flag (0316)	
		5 3	B	0 0 0 6	/	Col ctr	
		5 4	S	0 3 3 3	/	1 at 29	
		5 5	H	0 0 0 6	/	<input checked="" type="checkbox"/> Col ctr	
		5 6	T	[	/	Exit from transformation loop	
		5 7	U	0 2 2 1	/		
		5 8	B	0 2 2 5	/		
		5 9	A	0 0 1 7	/	<input checked="" type="checkbox"/> 1 at 29 } A[] Non-pivot row	
		6 0	Y	0 2 2 5	/	H[] Element	
		6 1	Y	0 2 2 6	/		
		6 2	B	0 0 4 8	/	1 at 29	
		6 3	A	0 2 2 4	/	<input checked="" type="checkbox"/> M[] P.R. Element	

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JOB NO.	PROGRAM NO. F2-122	PROGRAM PREPARED BY R.A. Koenig	PROGRAM CHECKED BY POOL Review	DATE 02/09/59
PROBLEM: Inversion and Solution			TRACK 02	

PROGRAM INPUT CODES	STOP	LOCATION	INSTRUCTION		STOP	CONTENTS OF ADDRESS	NOTES
			OPERATION	ADDRESS			
		0,2,0,0	U	0,2,0,2			
		0,1	x,Z	6,3,6,3		Mask	(0143)
		0,2	Y	0,2,2,4		M[]	P.R. element
		0,3	U	0,1,5,3		Test	Col ctr.
		0,4	x,Z	3,6,0,0			(0139)
		0,5	[]			Ctr. 1	(0033,0053,0054)
		0,6					
		0,7	H	0,2,2,9		Add leading element	
		0,8	U	0,2,0,9			
		0,9	S	0,2,3,1		Add. Pivot element	
		1,0	T	0,2,4,3		→ ok to use this element	
		1,1	S	0,3,3,3		1 at 29	
		1,2	T	0,2,3,4		L.E.A.=P.E.A. → Δ Non-pivot ctr.	
		1,3	U	0,2,4,3		→ ok to use this element	
		1,4	x,R	0,5,0,0		F.P.	
		1,5	x,U	0,5,0,0			
		1,6	B	[]		Leading element	
		1,7	x,Y	0,0,0,0		Change sign	
		1,8	x,H	6,3,1,4		Store in temporary	
		1,9	E	0,3,0,1		Exit and transfer	
		2,0	[]				
		2,1	x,R	0,5,0,0		F.P.	
		2,2	x,U	0,5,0,0			
		2,3	x,B	6,3,1,4		- Leading element	
		2,4	M	[]		Pivot row element	
		2,5	A	[]		non-pivot row element	
		2,6	[]				
		2,7	E	0,1,5,3			
		2,8	[]			not used in Stat version	
		2,9	[]			add. leading element	(0407,0243,0207,0405)
		3,0	[]			at 29	(0115)
		3,1	[]			Pivot Element Address	(0145,0209,0301)

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LGP-30 CODING SHEET

Division (6)

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JOB NO.	PROGRAM NO. F2-122	PROGRAM PREPARED BY R.A. Koenig	PROGRAM CHECKED BY: POOL Review	DATE 02/09/59	
PROBLEM: Inversion and Solution				TRACK 02	

PROGRAM INPUT CODES	STOP	LOCATION	INSTRUCTION		STOP	CONTENTS OF ADDRESS	NOTES
			OPERATION	ADDRESS			
		0 2 3 2	x, Z	0 0 0 8		32 at 31	(0103,0310)
		3 3	x, Z	0 0 0 8		32 at 31	(0254)
		3 4	B	0 2 2 0		ctr. 2	
		3 5	A	0 3 5 7		1 at 29	
		3 6	H	0 2 2 0		ctr. 2	
		3 7	S	0 0 1 6		p at 29	
		3 8	T	0 4 0 5		→ Not done with leading element	
		3 9	U	0 3 5 9		→ Advance pivot element	
		4 0					
		4 1	[			p at 29	(0362)
		4 2	x Z	4 8 0 0			(0256)
		4 3	B	0 2 2 9		Add leading element	Initialize non-pivot transf. for X'X
		4 4	Y	0 2 1 6		B[]	
		4 5	Y	0 4 1 7		B[]	
		4 6	Y	0 2 2 5		A[]	
		4 7	Y	0 2 2 6		H[]	
		4 8	U	0 4 1 7		→ Test leading element	
		4 9	B	0 0 1 6		p at 29 for zero	Here: I transf complt.
		5 0	S	0 3 2 9		1 at 29	
		5 1	U	0 1 5 5			
		5 2	A	0 3 3 1		xz4800	Set up add P.R. Element.
		5 3	Y	0 2 2 4		M[]	in I
		5 4	B	0 2 3 3		32 at 31	
		5 5	N	0 2 2 0		ctr. 2	
		5 6	A	0 2 4 2		xz4800	
		5 7	U	0 2 6 0			
, 0 0 0		5 8		4 2		33 at 30	(0019)
0 0 0 2		5 9	4 0 0 0	0 0 0 0		1 at 1	(0020)
		6 0	Y	0 2 2 5		A[]	Set up addresses
		6 1	Y	0 2 2 6		H[]	Non-pivot row in I
		6 2	U	0 3 1 3			
		6 3	[R Ctr. 1	

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JOB NO.	PROGRAM NO. F2-122	PROGRAM PREPARED BY: R.A. Koenig	PROGRAM CHECKED BY: POOL Review	DATE 02/09/59
PROBLEM: Inversion and Solution				TRACK 03

PROGRAM INPUT CODES	STOP	LOCATION	INSTRUCTION		STOP	CONTENTS OF ADDRESS	NOTES
			OPERATION	ADDRESS			
		<input checked="" type="checkbox"/>					
		0,3,0,0					
		0,1	B	0,2,3,1		Pivot element address	
		0,2	Y	0,2,2,4		M[]	P.R. Element
		0,3	B	0,4,2,5	<input checked="" type="checkbox"/>	p at 29	
		0,4	S	0,1,4,7		row no.	
		0,5	U	0,3,0,6			
		0,6	R	0,1,5,6		} Transformation loop	
		0,7	U	0,1,5,4	<input checked="" type="checkbox"/>		
		0,8	U	0,3,1,0		X'X Done on non-pivot transf.	
		0,9					
		1,0	B	0,2,3,2		32 at 31	} Set up add
		1,1	N	0,1,4,7	<input checked="" type="checkbox"/>	row no.	
		1,2	U	0,2,5,2			} P.R. Element for I
		1,3	R	0,1,5,6			
		1,4	U	0,3,1,6			} Non-pivot row transf. for I
		1,5	U	0,3,2,1	<input checked="" type="checkbox"/>		
		1,6	B	0,1,5,2		Transformation Flag	} Does not apply to Stat. matrices
		1,7	T	0,2,4,9		→ Use (p-1) in Col ctr.	
		1,8	B	0,1,4,7		row no.	
		1,9	U	0,1,5,5	<input checked="" type="checkbox"/>	→ Enter transformation loop	
		2,0					
		2,1	x C	6,3,0,0		dump acc.	
		2,2	C	0,3,5,8		R Ctr. 2	
		2,3	U	0,3,2,4	<input checked="" type="checkbox"/>		
		2,4	B	0,4,0,3		xz6000	
		2,5	A	0,1,4,7		row no	
		2,6	Y	0,2,2,4		M[]	P.R. Element
		2,7	U	0,3,3,4	<input checked="" type="checkbox"/>		
0,0,0		2,8		2,0		32 at 31	(0149)
		2,9		4		1 at 29	(0057,0250)
		3,0		7 J		31 at 29	(0351)
		3,1		3,0,0,0	<input checked="" type="checkbox"/>	XZ4800	

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PROBLEM: Inversion and Solution				TRACK 03	

PROGRAM INPUT CODES	STOP	LOCATION	INSTRUCTION		STOP	CONTENTS OF ADDRESS	NOTES
			OPERATION	ADDRESS			
	/						
	/	0332		4		1 at 29	(0053,0360,0446)
		33		4		1 at 29	(0011,0154,0211)
		34	B	0220		ctr.2	
		35	A	0007	X	XH6000	
		36	U	0339			
		37					
		38					
		39	Y	0225	X	} Initialize A[] non-pivot H[] X'y	
		40	C	0226			
		41	R	0156		} Transformation loop	
		42	U	0155			
		43	B	0358	X		
		44	A	0402		1 at 29	} Δ R ctr.2
		45	H	0358			
		46	S	0411		r at 29	
		47	T	0350	X	→ Not done all y's in transf.	
		48	U	0234		→ All cala. done this row: ΔL.E.A.	
		49					
		50	B	0224			} ΔM[] P.R. Element
		51	A	0330	X	31 at 29	
		52	Y	0224			
		53	B	0404		31 at 29	
		54	A	0226		H[]	
		55	U	0339	X		
		56					
		57	x Z	0001		1 at 29	(0235,0442)
		58	[]				
		59	B	0147	X	Row no.	} test for end of inversion & solution
		60	A	0332		1 at 29	
		61	H	0147		Row no.	
		62	S	0241		p at 29	
		63	T	0018	X	To next pivot element	

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JOB NO.	PROGRAM NO. F2-122	PROGRAM PREPARED BY: R.A. Koenig	PROGRAM CHECKED BY: POOL Review	DATE 02/09/59	
PROBLEM: Inversion and Solution				TRACK 04	

PROGRAM INPUT CODES	STOP	LOCATION	INSTRUCTION		STOP	CONTENTS OF ADDRESS	NOTES
			OPERATION	ADDRESS			
	/						
	/	0400	U	[]	/	"R" here:	Exit
		01			/		
		02	x,Z	0001	/	1 at 29	(0116,0344)
		03	x,Z	6000	/	<input checked="" type="checkbox"/>	(0324)
		04	x,Z	0031	/	31 at 29	(0353)
		05	B	0229	/		
		06	A	0049	/	32 at 29	} Δ Leading element Address
		07	H	0229	/	<input checked="" type="checkbox"/>	
		08	U	0209	/		
		09			/		
		10	x,P	1600	/	C.R.	Here: Pivot element= 0
		11	[]		/	<input checked="" type="checkbox"/>	r at 29 and delay (0346)
		12	x,P	3927	/	"X"	
		13	x,Z	0028	/	Delay	
		14	X,P	3200	/	"I"	
		15	x,Z	0001	/	<input checked="" type="checkbox"/>	Delay
		16	U	0422	/		
		17	B	[]	/	Fr. leading element	
		18	T	0214	/	→ Use leading element	
		19	S	0048	/	<input checked="" type="checkbox"/>	1 at 29
		20	T	0234	/	→ Leading element = 0 → To Δ L.E.A.	
		21	U	0214	/	→ Use this leading element	
		22	x,P	3901	/	"X"	
		23	U	0016	/	<input checked="" type="checkbox"/>	→ To stop
		24			/		
		25	[]		/	p at 29	(0303)
		26	x,B	6312	/	r at 29	
		27	H	0411	/	<input checked="" type="checkbox"/>	} Store r at 29
		28	C	0230	/		
		29	U	0021	/		
		30			/		
		31			/	<input checked="" type="checkbox"/>	

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