Digital Computer Laboratory
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SUBROUTINES AVAILABLE

FOR THE

WHIRLWIND I COMPUTER

Auxiliary Storage

AS 1 Drum Input and Output

Differential Equations

DE 1	Runge-Kutta
DE 2	Kutta-Gill
DE 3	Kutta-Gill (Extra Precision)

Functions

FU 1	Exponential (30-j, j)	$j \neq 0$
FU 2b	MRA Square Root (30-j, j)	$j \neq 0$
FU 3	Ln x (30-j, j)	$j \neq 0$
FU 4	Sin x, Cos x (30-j, j)	$j \neq 0$
FU 5	Sinh x, Cosh x (30-j, j)	$j \neq 0$
FU 6	Arc Sin (24, 6)	
FU 7	Arc Tan (30-j, j)	$j \neq 0$

Matrix Routines

MA 1	Largest Eigenvalue
MA 2	Solution of Simultaneous Linear Equations (Craig's Method)
MA 3	Rectangular Matrix Multiplication (3C-j, y)
MA 4	Matrix Diagonalization (Symmetric)
MA 5	Matrix Inversion or Square Root Inversion
MA 6	Crout's Method
MA 7	Least Square Matrix

Output (Delayed Typewriter)

OD 1	Format and Print G. D. Nos. (30-j, j)	j ≠ 0
OD 2	Delayed Print (30-j, j)	j ≠ 0
OD 3	Delayed Decimal Integer (Single length)	
OD 4	Delayed or Direct Print (30-j, j)	j ≠ 0
OD 5	Delayed Octal Print (Single length)	

Output (Scope)

OS 1	MRA Decimal Column Scope Layout
OS 2	AC Decimal Integer Column Layout
OS 3	Display Flexo Characters on Scope

Cutput (Direct Typewriter)

OT 1	Print Decimal Number (30-j,j)	j ≠ 0
OT 2	Direct or Delayed Print (See OD 4)	

Special

SP 2		Extract Integral Part of MRA
SP 3	(30, 0)	Divide by Binomial
SP 4	(30, 0)	Divide by SS