

## [05\_04]九州大学大型計算機センター広報表紙奥付等

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バージョン：  
権利関係：

### ライブラリプログラム登録一覧表

#### 1. 九州大学作成

(昭和47年7月1日現在)

1.1 九大センターで開発または収集されたプログラムで以下のような形式と意味をもっています。

形式 A.9/A.A/A.XX.XX.XX.XX      A : 英字, 9 : 数字, X : 英字または数字  
 ①            ②            ③            ④

- 意味 ①……分類コードを示す。  
 ②……作成別を示す。QC : センターで開発収集 QU : 利用者提供  
 ③……用途を示す。 A : ALGOL F : FORTRAN Z : その他 (応用プログラム等)  
 ④……プログラム名 (サブルーチン名、手続き名、エレメント名)

プログラムライブラリ分類コード表

A プログラムによる算術演算	1.実数 2.複素数 3.BCD演算 4.級数	I 入力	1.2進 2.8進 3.10進 4.BCD 5.紙テープ 6.補助記憶 9.複合入力
B 初等関数	1.三角関数 2.双曲線関数 3.指数関数および対数関数 4.平方根、立方根など 5.べき級数 6.その他	J 出力	0.一般 1.2進 2.8進 3.10進 4.BCD 5.アナログ 6.プロット 7.複合出力
C 多項式および関数に対する演算および微分方程式の解	1.多項式の値 2.多項式の零点 3.特殊関数の値 4.連立非線型代数方程式 5.連立超越方程式 6.ベッセル関数 7.関数の極小化	K 内部情報伝達	1.ドラムの読み書き 2.磁心より磁心、ドラムよりドラムなど
D 関数に対する演算および微分方程式の解	0.積分方程式の数値解 1.数値積分 2.常微分方程式の数値解 3.偏微分方程式の数値解 4.数値微分 5.階差方程式の数値解 6.関数の変換	L アセンブラ、コンパイラなど	1.アセンブラ 2.コンパイラ 3.モニタ関係
E 内挿および外挿	1.表索引と内挿 2.曲線のあてはめ 3.スムージング (平滑化) 4.階差	M 特殊情報処理	1.分類 2.内部変換 (固定より浮動様式へなど) 3.照合およびませあわせ
F 行列、ベクトルおよび連立一次方程式に対する演算	1.行列演算 2.固有値と固有ベクトル 3.行列式 4.連立一次方程式	N デバッグングルーチン	1.トレーシングトラッピング 2.ダンブ 3.サーチ 4.ブレークポイント印刷
G 統計解析および確率	1.データ解析 2.相関および回帰解析 3.時系列 4.分散分析 5.乱数発生 6.多変量解析 7.密度関数分布関数、パーセント点 8.順列、組み合わせの発生置換 9.その他	O シミュレーション	
H オペレーションズリサーチおよびリニアプログラミング	1.リニアプログラミング 2.ゲームの理論 3.PERT/CPMの基本ルーチン 4.予測関係 5.DYNAMO	P 計算機診断プログラム	
		Q サービスプログラム	1.破算、掃零プログラム 2.チェックサムプログラム 3.磁気テープ 4.時計 9.その他
		Y 特定分野に対する開発プログラム	3.原子核
		Z その他	

#### 1.2 表の説明

1) ファイル名 表中ファイル名とあるのは登録されているファイルの名前を示します。

ファイル名とLIEDで使うファイル定義名は以下の通りです。

	ファイル名	ファイル定義名	内容	形式
P	QS.PLIB.RB	P.LIB	利用者提供・センター開発ライブラリの内基本的なルーチン	RB
PT	QS.PLIB.TEST	P.TEST	試用期間中ライブラリの内基本的なルーチン	RB
A1	QS.ALIB.RB1	_____	利用者提供応用プログラム (原子核コード関係)	RB
A2	QS.ALIB.RB2	_____	" (DYSTALプログラム群)	RB
AE	QS.ALIB.EB	_____	"	EB

2) 登録番号の前に\*印がついているものは試用期間中のライブラリ、\*\*印のあるものは新規登録で試用期間中のライブラリであることを示します。

登録番号	IDコード	題	目	ファイル名	登録番号	IDコード	題	目	ファイル名
4	C2/QU/F/SANJ1	3-DEGREE ALGEBRAIC EQUATION WITH COMPLEX NUMBER COEFFICIENT	P	10 F4/QU/F/GSREND			LINEAR EQUATION (GAUSS-SEIDEL METHOD)	P	
*57	C2/QC/F/GRAEFS	ALGEBRAIC EQUATION OF HIGHER ORDER (GRAEFFE MODIFY METHOD)	PT	46 G1/QU/L/CNTGTB			ANALYSIS OF 2*2 CONTINGENCY TABLE	AE	
*58	C2/QC/F/GRAEFD	ALGEBRAIC EQUATION OF HIGHER ORDER (GRAEFFE MODIFY METHOD)	PT	35 G5/QC/F/KUNIRN			UNIFORM RANDOM NUMBER GENERATOR	P	
7	C3/QU/F/CNDS	CUMULATIVE NORMAL DYSTRIIBUTION FUNCTION	P	*60 G6/QU/L/MMRA			NORMAL MULTIVARIATE MULTIPLE REGRESSION ANALYSIS INVOLVING MULTIPLICITY OF POPULATIONS	AE	
8	C3/QU/F/RCNDS	INVERSE FUNCTION OF CUMULATIVE NORMAL DISTRIBUTION FUNCTION	P	45 G9/QU/L/EIYOO			STATISTICAL ANALYSIS OF NUTRITIONAL SURVEY DATA	AE	
16	C3/QU/F/GAMMAD	GAMMA FUNCTION	P	*55 H1/QC/L/MINIMX			MINIMAX SOLUTION TO OVERDETERMINED LINEAR SYSTEMS	AE	
17	C3/QU/F/PRESNL	GFNERALIZED FRESNEL INTEGRAL	P	*56 H1/QC/F/MINMAX			MINIMAX SOLUTION TO OVERDETERMINED LINEAR SYSTEMS	PT	
22	C3/QU/F/DRPGMA	RECIPROCAL OF GAMMA FUNCTION	P	6 H3/QU/L/SUCPM			CALCULATION OF CPM	AE	
*59	C3/QU/F/DERF	ERROR FUNCTION	PT	49 I5/QC/F/PTR			INPUT FOR PTR	P	
34	C7/QU/F/POWELL	MINIMIZATION OF A FUNCTION	P	51 I6/QC/F/FRDWT			READ/WRITE ROUTINE FOR GENERAL FILE	P	
15	D1/QU/F/ROMBFR	ROMBERG'S INTEGRATION WITH ERROR CONTROL	P	*54 I6/QU/F/FLDATA			READ/WRITE ROUTINE FOR D.T. FILE WITH ALGOL-H TYPE FORMAT	PT	
18	D1/QU/F/CGJQ	COEFFICIENTS OF GAUSS-JACOBI QUADRATURE FORMULA	P	2 I9/QU/F/INLIST			INPUT, NON-FORMAT	P	
19	D1/QU/F/CGLQ	COEFFICIENTS OF GAUSS-LAGUERKE QUADRATURE FORMULA	P	*53 I9/QU/F/INDATA			READ ROUTINE WITH ALGOL-H TYPE FORMAT	PT	
20	D1/QU/F/ROMBGS	NUMERICAL INTEGRATION USING ROMBERG'S ALGORITHM	P	13 J0/QU/F/MPCTS			PRINT OF COMPLEX MATRIX	P	
21	D1/QU/F/ROMBGD	NUMERICAL INTEGRATION USING ROMBERG'S ALGORITHM	P	14 J0/QU/F/MXPTS			PRINT OF REAL MATRIX	P	
23	D6/QC/F/FFTCS	FAST FOURIER TRANSFORM (COMPLEX TRANSFORM)	P	42 J0/QU/F/REFORM			OUTPUT WITHOUT FORMAT	P	
24	D6/QC/F/FFTRS	FAST FOURIER TRANSFORM(REAL TRANSFORM)	P	47 J0/QC/F/GRAPH			PRINT OF GRAPH	P	
1	F2/QU/F/HER4	EIGENVALUFS AND EIGENVECTORS OF HERMITIAN MATRIX	P	48 J0/QC/F/ODLIST			PRINT OF INPUT DATA	P	
11	F2/QU/F/SQRS	EIGENVALUES AND EIGENVECTORS OF REAL SYMMETRIC MATRIX (QR METHOD)	P	52 J0/QC/F/LETTER			PRINT OF LETTER	P	
12	F2/QU/F/SQRD	EIGENVALUES AND EIGENVECTORS OF REAL SYMMETRIC MATRIX (QR METHOD)	P	61 K2/QC/F/NBITOP			BIT OPERATION FUNCTION FOR FORTRAN USER CONTROL	P	
30	F2/QU/F/SQROS	EIGENVALUE OF SYMMETRIC MATRIX (QR METHOD)	P	**62 Q9/QC/L/CONTRL			EDITOR	P	
31	F2/QU/F/SQROD	EIGENVALUE OF SYMMETRIC MATRIX (QR METHOD)	P	**63 Y3/QC/L/EDITOR			ELASTIC SCATTERING ANALYSIS WITH NUCLEAR OPTICAL MODEL (ELASTC)	AE	
32	F2/QU/F/HQROS	EIGENVALUE OF HERMITIAN MATRIX (QR METHOD)	P	25 Y3/QC/L/AA01			DWBA ANALYSIS OF DIRECT NUCLEAR REACTION 1 (DWBA1)	AE	
33	F2/QU/F/HQROD	EIGENVALUE OF HERMITIAN MATRIX (QR METHOD)	P	26 Y3/QC/L/AA02			CLBSCH-GORDAN COEFFICIENT	A1	
43	F2/QU/F/HQRS	EIGENVALUES AND EIGENVECTORS OF HERMITIAN MATRIX (QR METHOD)	P	27 Y3/QC/L/DB01			RACAH COEFFICIENT	A1	
44	F2/QU/F/HQRD	EIGENVALUES AND EIGENVECTORS OF HERMITIAN MATRIX (QR METHOD)	P	28 Y3/QC/L/DB02			NINE-J SYMBOL	A1	
3	F4/QU/F/SWPML	INVERSE MATHIX AND LINEAR EQUATION (USING DISK OR MT)	P	29 Y3/QC/L/DB03			DWBA ANALYSIS OF DIRECT NUCLEAR REACTION 2 (DWBA2)	AE	
9	F4/QU/F/GSRENS	LINEAR EQUATION (GAUSS-SEIDEL METHOD)	P	30 Y3/QC/L/BA02			NUCLEON-NUCLEON SCATTERING BY R-SPACE POTENTIAL (NNS)	AE	
				37 Y3/QC/L/CA01			VARIABLE METRIC METHOD FOR MINIMIZATION	A1	
				39 Y3/QC/L/DA02			BCS EQUATION	A1	
				40 Y3/QC/L/DA03			RANDOM PHASE APPROXIMATION (RPA)	AE	
				41 Y3/QC/L/DB05			MATRIX FLEMENTS OF TENSOR FORCE BETWEEN HARMONIC OSCILLATOR WAVE FUNCTIONS	A1	
				5 Z1/QU/L/DYSTAL			DYSTAL-DYNAMIC STORAGE ALLOCATION LANGUAGE IN FORTRAN	A2	

## 2. 富士通作成 SSL FORTRAN

これらのプログラムは、SYS 1. FSSLIBのファイルに登録されています。LIEDで使うファイル定義名はF. SSLです。

最新のマニュアルは、FACOM 230-60 SSL (科学用サブルーチンライブラリ) 使用方法説明書FORTRAN編第6版(資料番号230/60-301~309-001-6)です。

登録番号	呼び出し名	題	目	登録番号	呼び出し名	題	目
B. 一般、特殊関数				C/002/S	SIMPS	NUMERICAL INTEGRATION (SIMPSON'S 1/3 RULE)	
B/001/S	CELI1S	COMPLETE ELLIPTIC INTEGRAL OF THE FIRST KIND		C/002/D	SIMPD	NUMERICAL INTEGRATION (SIMPSON'S 1/3 RULE)	
B/002/S	CELI2S	COMPLETE ELLIPTIC INTEGRAL OF THE SECOND KIND		C/003/S	GAUSSS	NUMERICAL INTEGRATION (GAUSSIAN FORMULA)	
B/003/D	EXPGD	EXPONENTIAL INTEGRAL 1		C/003/D	GAUSSD	NUMERICAL INTEGRATION (GAUSSIAN FORMULA)	
B/004/S	GAMANS	GAMMA FUNCTION		C/004/D	GAS3D	NUMERICAL INTEGRATION ( 3-POINT GAUSSIAN FORMULA)	
B/005/S	GAMA1S	GAMMA FUNCTION		C/005/D	GAS4D	NUMERICAL INTEGRATION ( 4-POINT GAUSSIAN FORMULA)	
R/008/S	LNKA1S	LOG(N!)		C/006/D	GAS5D	NUMERICAL INTEGRATION ( 5-POINT GAUSSIAN FORMULA)	
B/008/D	LNKA1D	LOG(N!)		C/007/D	GAS6D	NUMERICAL INTEGRATION ( 6-POINT GAUSSIAN FORMULA)	
B/009/D	FRES D	FRESNEL'S INTEGRAL		C/008/D	GAS7D	NUMERICAL INTEGRATION ( 7-POINT GAUSSIAN FORMULA)	
B/010/D	SID	SINE INTEGRAL		C/009/D	GAS8D	NUMERICAL INTEGRATION ( 8-POINT GAUSSIAN FORMULA)	
B/011/D	CID	COSINE INTEGRAL		C/010/D	GAS9D	NUMERICAL INTEGRATION ( 9-POINT GAUSSIAN FORMULA)	
B/012/D	BESJ0D	BESSEL FUNCTION J0(X)		C/011/D	GAS10D	NUMERICAL INTEGRATION (10-POINT GAUSSIAN FORMULA)	
B/013/D	BESJ1D	BESSEL FUNCTION J1(X)		C/012/D	GAS12D	NUMERICAL INTEGRATION (12-POINT GAUSSIAN FORMULA)	
B/014/D	BESY0D	BESSEL FUNCTION Y0(X)		C/013/D	GAS16D	NUMERICAL INTEGRATION (16-POINT GAUSSIAN FORMULA)	
B/015/D	BESY1D	BESSEL FUNCTION Y1(X)		C/014/D	GAS24D	NUMERICAL INTEGRATION (24-POINT GAUSSIAN FORMULA)	
B/016/D	BESI0D	BESSEL FUNCTION I0(X)		C/015/D	GAS32D	NUMERICAL INTEGRATION (32-POINT GAUSSIAN FORMULA)	
B/017/D	BESI1D	BESSEL FUNCTION I1(X)		C/016/S	SIMP1S	NUMERICAL INTEGRATION (SIMPSON'S 1/3 RULE, DIGITAL INPUT 1 )	
B/018/D	BESK0D	BESSEL FUNCTION K0(X)		C/016/D	SIMP1D	NUMERICAL INTEGRATION (SIMPSON'S 1/3 RULF, DIGITAL INPUT 1 )	
B/019/D	BESK1D	BESSEL FUNCTION K1(X)		C/017/S	GSL4S	NUMERICAL INTEGRATION ( 4-POINT GAUSS-LAGUERRE FORMULA)	
B/020/D	LEGDD	LEGENDRE'S POLYNOMIAL		C/018/S	GSL5S	NUMERICAL INTEGRATION ( 5-POINT GAUSS-LAGUERRE FORMULA)	
B/021/S	BEK1S	POWER SERIES		C/019/S	GSL6S	NUMERICAL INTEGRATION ( 6-POINT GAUSS-LAGUERRE FORMULA)	
B/021/D	BEK1D	POWER SERIES		C/020/S	GSL7S	NUMERICAL INTEGRATION ( 7-POINT GAUSS-LAGUERRE FORMULA)	
B/022/S	BESJNS	BESSEL FUNCTION JN(X)		C/021/S	GSL8S	NUMERICAL INTEGRATION ( 8-POINT GAUSS-LAGUERRE FORMULA)	
B/022/D	BESJND	BESSEL FUNCTION JN(X)		C/022/S	GSL9S	NUMERICAL INTEGRATION ( 9-POINT GAUSS-LAGUERRE FORMULA)	
B/023/S	BESYNS	BESSEL FUNCTION YN(X)					
B/023/D	BESYND	BESSEL FUNCTION YN(X)					
B/024/S	BESINS	BESSEL FUNCTION IN(X)					
B/024/D	BESIND	BESSEL FUNCTION IN(X)					
B/025/S	BFSKNS	BESSEL FUNCTION KN(X)					
B/025/D	BESKND	BESSEL FUNCTION KN(X)					
R/026/S	CEP12S	COMPLETE ELLIPTIC INTEGRAL OF THE FIRST AND SECOND KINDS					
B/026/D	CEP12D	COMPLETE ELLIPTIC INTEGRAL OF THE FIRST AND SECOND KINDS					
B/027/S	EXPG2S	EXPONENTIAL INTEGRAL 2					
B/027/D	EXPG2D	EXPONENTIAL INTEGRAL 2					
C. 微積分							
C/001/S	DIFLAS	NUMERICAL DIFFERENTIATION (LAGRANGE'S INTERPOLATION)					
C/001/D	DIFLAD	NUMERICAL DIFFERENTIATION (LAGRANGE'S INTERPOLATION)					

C/023/S	GSL10S	NUMERICAL INTEGRATION (10-POINT GAUSS-LAGUERRE FORMULA)	C/042/S	GSH9S	NUMERICAL INTEGRATION ( 9-POINT GAUSS-HERMITE FORMULA)
C/023/D	GSL10D	NUMERICAL INTEGRATION (10-POINT GAUSS-LAGUERRE FORMULA)	C/043/S	GSH10S	NUMERICAL INTEGRATION (10-POINT GAUSS-HERMITE FORMULA)
C/024/S	GSL11S	NUMERICAL INTEGRATION (11-POINT GAUSS-LAGUERRE FORMULA)	C/043/D	GSH10D	NUMERICAL INTEGRATION (10-POINT GAUSS-HERMITE FORMULA)
C/024/D	GSL11D	NUMERICAL INTEGRATION (11-POINT GAUSS-LAGUERRE FORMULA)	C/044/S	GSH11S	NUMERICAL INTEGRATION (11-POINT GAUSS-HERMITE FORMULA)
C/025/S	GSL12S	NUMERICAL INTEGRATION (12-POINT GAUSS-LAGUERRE FORMULA)	C/044/D	GSH11D	NUMERICAL INTEGRATION (11-POINT GAUSS-HERMITE FORMULA)
C/025/D	GSL12D	NUMERICAL INTEGRATION (12-POINT GAUSS-LAGUERRE FORMULA)	C/045/S	GSH12S	NUMERICAL INTEGRATION (12-POINT GAUSS-HERMITE FORMULA)
C/026/S	GSL13S	NUMERICAL INTEGRATION (13-POINT GAUSS-LAGUERRE FORMULA)	C/045/D	GSH12D	NUMERICAL INTEGRATION (12-POINT GAUSS-HERMITE FORMULA)
C/026/D	GSL13D	NUMERICAL INTEGRATION (13-POINT GAUSS-LAGUERRE FORMULA)	C/046/S	GSH13S	NUMERICAL INTEGRATION (13-POINT GAUSS-HERMITE FORMULA)
C/027/S	GSL14S	NUMERICAL INTEGRATION (14-POINT GAUSS-LAGUERRE FORMULA)	C/046/D	GSH13D	NUMERICAL INTEGRATION (13-POINT GAUSS-HERMITE FORMULA)
C/027/D	GSL14D	NUMERICAL INTEGRATION (14-POINT GAUSS-LAGUERRE FORMULA)	C/047/S	GSH14S	NUMERICAL INTEGRATION (14-POINT GAUSS-HERMITE FORMULA)
C/028/S	GSL15S	NUMERICAL INTEGRATION (15-POINT GAUSS-LAGUERRE FORMULA)	C/047/D	GSH14D	NUMERICAL INTEGRATION (14-POINT GAUSS-HERMITE FORMULA)
C/028/D	GSL15D	NUMERICAL INTEGRATION (15-POINT GAUSS-LAGUERRE FORMULA)	C/048/S	GSH15S	NUMERICAL INTEGRATION (15-POINT GAUSS-HERMITE FORMULA)
C/029/D	GSL16D	NUMERICAL INTEGRATION (16-POINT GAUSS-LAGUERRE FORMULA)	C/048/D	GSH15D	NUMERICAL INTEGRATION (15-POINT GAUSS-HERMITE FORMULA)
C/030/D	GSL17D	NUMERICAL INTEGRATION (17-POINT GAUSS-LAGUERRE FORMULA)	C/049/D	GSH16D	NUMERICAL INTEGRATION (16-POINT GAUSS-HERMITE FORMULA)
C/031/D	GSL18D	NUMERICAL INTEGRATION (18-POINT GAUSS-LAGUERRE FORMULA)	C/050/D	GSH17D	NUMERICAL INTEGRATION (17-POINT GAUSS-HERMITE FORMULA)
C/032/D	GSL19D	NUMERICAL INTEGRATION (19-POINT GAUSS-LAGUERRE FORMULA)	C/051/D	GSH18D	NUMERICAL INTEGRATION (18-POINT GAUSS-HERMITE FORMULA)
C/033/D	GSL20D	NUMERICAL INTEGRATION (20-POINT GAUSS-LAGUERRE FORMULA)	C/052/D	GSH19D	NUMERICAL INTEGRATION (19-POINT GAUSS-HERMITE FORMULA)
C/034/D	GSL21D	NUMERICAL INTEGRATION (21-POINT GAUSS-LAGUERRE FORMULA)	C/053/D	GSH20D	NUMERICAL INTEGRATION (20-POINT GAUSS-HERMITE FORMULA)
C/035/D	GSL22D	NUMERICAL INTEGRATION (22-POINT GAUSS-LAGUERRE FORMULA)	C/054/D	GSH21D	NUMERICAL INTEGRATION (21-POINT GAUSS-HERMITE FORMULA)
C/036/D	GSL23D	NUMERICAL INTEGRATION (23-POINT GAUSS-LAGUERRE FORMULA)	C/055/D	GSH22D	NUMERICAL INTEGRATION (22-POINT GAUSS-HERMITE FORMULA)
C/037/D	GSL24D	NUMERICAL INTEGRATION (24-POINT GAUSS-LAGUERRE FORMULA)	C/056/D	GSH23D	NUMERICAL INTEGRATION (23-POINT GAUSS-HERMITE FORMULA)
C/038/D	GSL25D	NUMERICAL INTEGRATION (25-POINT GAUSS-LAGUERRE FORMULA)	C/057/D	GSH24D	NUMERICAL INTEGRATION (24-POINT GAUSS-HERMITE FORMULA)
C/039/D	GSL26D	NUMERICAL INTEGRATION (26-POINT GAUSS-LAGUERRE FORMULA)	C/058/D	GSH25D	NUMERICAL INTEGRATION (25-POINT GAUSS-HERMITE FORMULA)
C/040/S	GSH7S	NUMERICAL INTEGRATION ( 7-POINT GAUSS-HERMITE FORMULA)	C/059/D	GSH26D	NUMERICAL INTEGRATION (26-POINT GAUSS-HERMITE FORMULA)
C/041/S	GSH8S	NUMERICAL INTEGRATION ( 8-POINT GAUSS-HERMITE FORMULA)	C/060/D	GSH27D	NUMERICAL INTEGRATION (27-POINT GAUSS-HERMITE FORMULA)

C/061/D GSH28D NUMERICAL INTEGRATION  
(28-POINT GAUSS-HERMITE FORMULA)

C/062/D GSH29D NUMERICAL INTEGRATION  
(29-POINT GAUSS-HERMITE FORMULA)

C/063/D GSH30D NUMERICAL INTEGRATION  
(30-POINT GAUSS-HERMITE FORMULA)

C/064/D GSH31D NUMERICAL INTEGRATION  
(31-POINT GAUSS-HERMITE FORMULA)

D. 代数方程式

D/001/S CARDNS ALGEBRAIC EQUATION OF DEGREE 3 (CARDANO'S METHOD)

D/001/D CARDND ALGEBRAIC EQUATION OF DEGREE 3 (CARDANO'S METHOD)

D/002/S FERRAS ALGEBRAIC EQUATION OF DEGREE 4 (FERRARI'S METHOD)

D/002/D FERRAD ALGEBRAIC EQUATION OF DEGREE 4 (FERRARI'S METHOD)

D/003/S BAIRIS ALGEBRAIC EQUATION (BAIRSTOW'S METHOD)

D/003/D BAIRID ALGEBRAIC EQUATION (BAIRSTOW'S METHOD)

D/004/S REGFLS ALGEBRAIC EQUATION (REGULA-FALSI METHOD)

D/004/D REGFLD ALGEBRAIC EQUATION (REGULA-FALSI METHOD)

D/005/S CNWTHS ALGEBRAIC EQUATION WITH COMPLEX COEFFICIENTS (NEWTON-RAPHSON METHOD)

D/005/D CNWTD ALGEBRAIC EQUATION WITH COMPLEX COEFFICIENTS (NEWTON-RAPHSON METHOD)

D/006/S JARATS ALGEBRAIC EQUATION (JARRATT'S MODIFIED METHOD)

D/006/D JARATD ALGEBRAIC EQUATION (JARRATT'S MODIFIED METHOD)

E. 連立一次方程式

E/001/S GAUSES LINEAR EQUATIONS (GAUSS-SEIDEL METHOD)

E/001/D GAUSED LINEAR EQUATIONS (GAUSS-SEIDEL METHOD)

E/002/S GAUELS LINEAR EQUATIONS (GAUSS ELIMINATION METHOD)

E/002/D GAUED LINEAR EQUATIONS (GAUSS ELIMINATION METHOD)

E/003/S SWEEPS LINEAR EQUATIONS (SWEEP OUT METHOD)

E/003/D SWEEP D LINEAR EQUATIONS (SWEEP OUT METHOD)

E/004/S CSWEPS LINEAR EQUATIONS WITH COMPLEX COEFFICIENTS (SWEEP OUT METHOD)

E/004/D CSWEPD LINEAR EQUATIONS WITH COMPLEX COEFFICIENTS (SWEEP OUT METHOD)

E/005/S TRIDGS TRIDIAGONAL EQUATIONS (GAUSS'S ELIMINATION METHOD)

E/006/S SIMEGS LINEAR EQUATIONS AND DETERMINANTS (SWEEP OUT METHOD)

E/006/D SIMEGD LINEAR EQUATIONS AND DETERMINANTS (SWEEP OUT METHOD)

## F. 常微分方程式

F/001/S RKGS ORDINARY DIFFERENTIAL EQUATION (RUNGE-KUTTA-GILL METHOD)

F/001/D RKGD ORDINARY DIFFERENTIAL EQUATION (RUNGE-KUTTA-GILL METHOD)

F/002/S SRKGS SYSTEM OF ORDINARY DIFFERENTIAL EQUATIONS (RUNGE-KUTTA-GILL METHOD)

F/002/D SRKGD SYSTEM OF ORDINARY DIFFERENTIAL EQUATIONS (RUNGE-KUTTA-GILL METHOD)

F/003/S SRKG2S SYSTEM OF ORDINARY DIFFERENTIAL EQUATIONS (RUNGE-KUTTA-GILL METHOD, WITH CHANGING INTERVAL AUTOMATICALLY)

F/003/D SRKG2D SYSTEM OF ORDINARY DIFFERENTIAL EQUATIONS (RUNGE-KUTTA-GILL METHOD, WITH CHANGING INTERVAL AUTOMATICALLY)

F/004/S HAMPCS SYSTEM OF SIMULTANEOUS ORDINARY DIFFERENTIAL EQUATIONS (HAMMING'S METHOD)

F/004/D HAMPCD SYSTEM OF SIMULTANEOUS ORDINARY DIFFERENTIAL EQUATIONS (HAMMING'S METHOD)

## G. 行列

G/001/S MADDS MATRIX ADDITION

G/001/D MADDD MATRIX ADDITION

G/002/S MSUBS MATRIX SUBTRACTION

G/002/D MSUBD MATRIX SUBTRACTION

G/003/S MMUL1S MATRIX MULTIPLICATION 1

G/003/D MMUL1D MATRIX MULTIPLICATION 1

G/004/S MMUL2S MATRIX MULTIPLICATION 2

G/004/D MMUL2D MATRIX MULTIPLICATION 2

G/005/S MTRNSS MATRIX TRANSPOSITION

G/005/D MTRNSD MATRIX TRANSPOSITION

G/006/S MUNITS UNIT MATRIX

G/006/D MUNITD UNIT MATRIX

G/007/S MPRTS MATRIX PRINT

G/007/D MPRTD MATRIX PRINT

G/008/S MDETS DETERMINANT

G/008/D MDETD DETERMINANT

G/009/S MINVS MATRIX INVERSION (SWEEP OUT METHOD)

G/009/D MINVD MATRIX INVERSION (SWEEP OUT METHOD)

G/010/S JACOBS EIGENVALUES AND EIGENVECTORS OF REAL SYMMETRIC MATRIX (THRESHOLD-JACOBI METHOD)

G/010/D JACOB D EIGENVALUES AND EIGENVECTORS OF REAL SYMMETRIC MATRIX (THRESHOLD-JACOBI METHOD)

G/013/S HERMTS EIGENVALUES AND EIGENVECTORS OF HERMITIAN MATRIX

G/013/D HERMTD EIGENVALUES AND EIGENVECTORS OF HERMITIAN MATRIX

G/014/S DABAS EIGENVALUES OF REAL MATRIX (DANILEVSKII'S METHOD)

G/014/D DARAD	EIGENVALUES OF REAL MATRIX (DANILEVSKII'S METHOD)	H/005/S FFTS	FAST FOURIER TRANSFORM
G/015/S DANEWS	EIGENVALUES AND EIGENVECTORS OF REAL MATRIX (DANILEVSKII'S METHOD)	H/005/D FFTD	FAST FOURIER TRANSFORM
G/015/D DANED	EIGENVALUES AND EIGENVECTORS OF REAL MATRIX (DANILEVSKII'S METHOD)	I. 関数近似	
G/016/S EVECS	EIGENVECTORS OF REAL MATRIX (SWEEP OUT METHOD)	I/001/D LSTSQD	POLYNOMIAL APPROXIMATION BY LEAST SQUARE BEST APPROXIMATION
G/016/D EVECD	EIGENVECTORS OF REAL MATRIX (SWEEP OUT METHOD)	I/002/D BSTAPD	BEST APPROXIMATION
G/017/S HOUSS	EIGENVALUES OF REAL SYMMETRIC MATRIX (HOUSEHOLDER METHOD)	I/003/S LAGS	LAGRANGE'S INTERPOLATION
G/017/D HOUSD	EIGENVALUES OF REAL SYMMETRIC MATRIX (HOUSEHOLDER METHOD)	I/003/D LAGD	LAGRANGE'S INTERPOLATION
G/018/S HESQRS	EIGENVALUES AND EIGENVECTORS OF REAL MATRIX (QR METHOD)	I/005/S CHERS	TCHEBYSHEV APPROXIMATION (COMPUTE THE TCHEBYSHEV COEFFICIENTS)
G/018/D HESQRD	EIGENVALUES AND EIGENVECTORS OF REAL MATRIX (QR METHOD)	I/005/D CHERD	TCHEBYSHEV APPROXIMATION (COMPUTE THE TCHEBYSHEV COEFFICIENTS)
G/019/S HOUS2S	EIGENVALUES AND EIGENVECTORS OF REAL SYMMETRIC MATRIX (HOUSEHOLDER METHOD)	I/006/S TINTS	TCHEBYSHEV APPROXIMATION (COMPUTE THE FUNCTION VALUE BY USING TCHEBYSHEV COEFFICIENTS)
G/019/D HOUS2D	EIGENVALUES AND EIGENVECTORS OF REAL SYMMETRIC MATRIX (HOUSEHOLDER METHOD)	I/006/D TINTD	TCHEBYSHEV APPROXIMATION (COMPUTE THE FUNCTION VALUE BY USING TCHEBYSHEV COEFFICIENTS)
G/020/S QREGNS	EIGENVALUES OF REAL MATRIX (QR METHOD)	I/007/S SPLINS	SPLINE INTERPOLATION
G/020/D QREGND	EIGENVALUES OF REAL MATRIX (QR METHOD)	I/007/D SPLIND	SPLINE INTERPOLATION
G/021/S GAVECS	EIGENVECTORS OF REAL MATRIX (INVERSE ITERATION METHOD)	J. 偏微分方程式	
G/021/D GAVECD	EIGENVECTORS OF REAL MATRIX (INVERSE ITERATION METHOD)	J/001/S ELPDES	PARTIAL DIFFERENTIAL EQUATION OF ELLIPTIC TYPE
G/022/S MINV2S	INVERSE MATRIX	J/002/S PAPDES	PARTIAL DIFFERENTIAL EQUATION OF PARABOLIC TYPE
G/022/D MINV2D	INVERSE MATRIX	J/002/D PAPDED	PARTIAL DIFFERENTIAL EQUATION OF PARABOLIC TYPE
G/023/S GAVE2S	RIGHT HAND SIDE AND LEFT HAND SIDE EIGENVECTORS OF REAL MATRIX (INVERSE ITERATION METHOD)	J/003/S HYPDES	PARTIAL DIFFERENTIAL EQUATION OF HYPERBOLIC TYPE
G/023/D GAVE2D	RIGHT HAND SIDE AND LEFT HAND SIDE EIGENVECTORS OF REAL MATRIX (INVERSE ITERATION METHOD)	J/003/D HYPDED	PARTIAL DIFFERENTIAL EQUATION OF HYPERBOLIC TYPE
G/024/S CHSQRS	EIGENVALUES AND EIGENVECTORS OF COMPLEX MATRIX (QR METHOD)	K. 積分方程式	
G/024/D CHSQRD	EIGENVALUES AND EIGENVECTORS OF COMPLEX MATRIX (QR METHOD)	K/001/S INEV2S	VOLTERRA'S INTEGRAL EQUATION OF SECOND KIND
G/025/S THJACS	EIGENVALUES AND EIGENVECTORS OF HERMITIAN MATRIX (THRESHOLD JACOBI METHOD)	K/001/D INEV2D	VOLTERRA'S INTEGRAL EQUATION OF SECOND KIND
G/025/D THJACD	EIGENVALUES AND EIGENVECTORS OF HERMITIAN MATRIX (THRESHOLD JACOBI METHOD)	Z. その他	
H. フーリエ級数		Z/001/S POADDS	ADDITION OF POLYNOMIALS
H/001/D COFOD	COSINE ANALYSIS OF FOURIER SERIES	Z/001/D POADD	ADDITION OF POLYNOMIALS
H/002/D SIFOD	SINE ANALYSIS OF FOURIER SERIES	Z/002/S POSUBS	SUBTRACTION OF POLYNOMIALS
H/003/D COASSD	COSINE ASSEMBLY OF FOURIER SERIES	Z/002/D POSUBD	SUBTRACTION OF POLYNOMIALS
H/004/D SIASSD	SINE ASSEMBLY OF FOURIER SERIES	Z/003/S POMULS	MULTIPLICATION OF POLYNOMIALS
		Z/003/D POMULD	MULTIPLICATION OF POLYNOMIALS
		Z/004/S PODIVS	DIVISION OF POLYNOMIALS
		Z/004/D PODIVD	DIVISION OF POLYNOMIALS
		Z/006/S NORRNS	NORMAL RANDOM NUMBERS
		Z/007/S POISNS	POISSON RANDOM NUMBERS
		Z/009/S COMBS	BINOMIAL COEFFICIENTS
		Z/009/D COMBD	BINOMIAL COEFFICIENTS

## 3. 富士通作成 SSL ALGOL

これらのプログラムは、SYS 1. ASSLIB のファイルに登録されています。LIEDで使うファイル定義名はA. SSLです。  
最新のマニュアルは、FACOM 230-60 SSL (科学用サブルーチンライブラリ) 使用方法解説書ALGOL編第4版 (資料番号230/60-301-309-002-4) です。

分類コード	呼び出し名	題	分類コード	呼び出し名	題
B. 一般、特関関数			C/002/A	SIMPA	NUMERICAL INTEGRATION (SIMPSON'S 1/3 RULE)
B/001/A	CEI11A	COMPLETE ELLIPTIC INTEGRAL OF THE FIRST KIND	C/002/B	SIMPB	NUMERICAL INTEGRATION (SIMPSON'S 1/3 RULE)
B/002/A	CEI12A	COMPLETE ELLIPTIC INTEGRAL OF THE SECOND KIND	C/003/A	GAUSSA	NUMERICAL INTEGRATION (GAUSSIAN FORMULA)
B/003/B	EXPGB	EXPONENTIAL INTEGRAL 1	C/003/B	GAUSSB	NUMERICAL INTEGRATION (GAUSSIAN FORMULA)
B/004/A	GAMANA	GAMMA FUNCTION	C/004/B	GAS3B	NUMERICAL INTEGRATION ( 3-POINT GAUSSIAN FORMULA)
B/005/A	GAMA1A	GAMMA FUNCTION	C/005/B	GAS4B	NUMERICAL INTEGRATION ( 4-POINT GAUSSIAN FORMULA)
B/008/A	LNKA1A	LOG(N!)	C/006/B	GAS5B	NUMERICAL INTEGRATION ( 5-POINT GAUSSIAN FORMULA)
B/008/B	LNKA1B	LOG(N!)	C/007/B	GAS6B	NUMERICAL INTEGRATION ( 6-POINT GAUSSIAN FORMULA)
B/009/B	FRESB	FRESNEL'S INTEGRAL	C/008/B	GAS7B	NUMERICAL INTEGRATION ( 7-POINT GAUSSIAN FORMULA)
B/010/B	SIB	SINE INTEGRAL	C/009/B	GAS8B	NUMERICAL INTEGRATION ( 8-POINT GAUSSIAN FORMULA)
B/011/B	CIB	COSINE INTEGRAL	C/010/B	GAS9B	NUMERICAL INTEGRATION ( 9-POINT GAUSSIAN FORMULA)
B/012/B	BESJOB	BESSEL FUNCTION J0(X)	C/011/B	GAS10B	NUMERICAL INTEGRATION (10-POINT GAUSSIAN FORMULA)
B/013/B	BESJ1B	BESSEL FUNCTION J1(X)	C/012/B	GAS12B	NUMERICAL INTEGRATION (12-POINT GAUSSIAN FORMULA)
B/014/B	BESY0B	BESSEL FUNCTION Y0(X)	C/013/B	GAS16B	NUMERICAL INTEGRATION (16-POINT GAUSSIAN FORMULA)
B/015/B	BFSY1B	BESSEL FUNCTION Y1(X)	C/014/B	GAS24B	NUMERICAL INTEGRATION (24-POINT GAUSSIAN FORMULA)
B/016/B	BESJ0B	BESSEL FUNCTION I0(X)	C/015/B	GAS32B	NUMERICAL INTEGRATION (32-POINT GAUSSIAN FORMULA)
B/017/B	BESI1B	BESSEL FUNCTION I1(X)	C/016/A	SIMP1A	NUMERICAL INTEGRATION (SIMPSON'S 1/3 RULE, DIGITAL INPUT 1)
B/018/B	BESK0B	BESSEL FUNCTION K0(X)	C/016/B	SIMP1B	NUMERICAL INTEGRATION (SIMPSON'S 1/3 RULE, DIGITAL INPUT 1)
B/019/B	BESK1B	BESSEL FUNCTION K1(X)	C/017/A	GSL4A	NUMERICAL INTEGRATION ( 4-POINT GAUSS-LAGUERRE FORMULA)
B/020/B	LEGDB	LEGENDRE'S POLYNOMIAL	C/018/A	GSL5A	NUMERICAL INTEGRATION ( 5-POINT GAUSS-LAGUERRE FORMULA)
B/021/A	BEK1A	POWER SERIES	C/019/A	GSL6A	NUMERICAL INTEGRATION ( 6-POINT GAUSS-LAGUERRE FORMULA)
B/021/B	BEK1B	POWER SERIES	C/020/A	GSL7A	NUMERICAL INTEGRATION ( 7-POINT GAUSS-LAGUERRE FORMULA)
B/022/A	BESJNA	BESSEL FUNCTION JN(X)	C/021/A	GSL8A	NUMERICAL INTEGRATION ( 8-POINT GAUSS-LAGUERRE FORMULA)
B/022/B	BFSJNB	BESSEL FUNCTION JN(X)	C/022/A	GSL9A	NUMERICAL INTEGRATION ( 9-POINT GAUSS-LAGUERRE FORMULA)
B/023/A	BESYNA	BESSEL FUNCTION YN(X)			
B/023/B	BESYNB	BESSEL FUNCTION YN(X)			
B/024/A	BFSINA	BESSEL FUNCTION IN(X)			
B/024/B	BFSINB	BESSEL FUNCTION IN(X)			
B/025/A	BESKNA	BESSEL FUNCTION KN(X)			
B/025/B	BESKNB	BESSEL FUNCTION KN(X)			
B/026/A	CEP12A	COMPLETE ELLIPTIC INTEGRAL OF THE FIRST AND SECOND KINDS			
B/026/B	CEP12B	COMPLETE ELLIPTIC INTEGRAL OF THE FIRST AND SECOND KINDS			
B/027/A	EXPGB2A	EXPONENTIAL INTEGRAL 2			
B/027/B	EXPGB2B	EXPONENTIAL INTEGRAL 2			
C. 微積分					
C/001/A	DIFLAA	NUMERICAL DIFFERENTIATION (LAGRANGE'S INTERPOLATION)			
C/001/B	DIFLAB	NUMERICAL DIFFERENTIATION (LAGRANGE'S INTERPOLATION)			



C/023/A GSL10A NUMERICAL INTEGRATION  
 (10-POINT GAUSS-LAGUERRE FORMULA)  
 C/023/B GSL10B NUMERICAL INTEGRATION  
 (10-POINT GAUSS-LAGUERRE FORMULA)  
 C/024/A GSL11A NUMERICAL INTEGRATION  
 (11-POINT GAUSS-LAGUERRE FORMULA)  
 C/024/B GSL11B NUMERICAL INTEGRATION  
 (11-POINT GAUSS-LAGUERRE FORMULA)  
 C/025/A GSL12A NUMERICAL INTEGRATION  
 (12-POINT GAUSS-LAGUERRE FORMULA)  
 C/025/B GSL12B NUMERICAL INTEGRATION  
 (12-POINT GAUSS-LAGUERRE FORMULA)  
 C/026/A GSL13A NUMERICAL INTEGRATION  
 (13-POINT GAUSS-LAGUERRE FORMULA)  
 C/026/B GSL13B NUMERICAL INTEGRATION  
 (13-POINT GAUSS-LAGUERRE FORMULA)  
 C/027/A GSL14A NUMERICAL INTEGRATION  
 (14-POINT GAUSS-LAGUERRE FORMULA)  
 C/027/B GSL14B NUMERICAL INTEGRATION  
 (14-POINT GAUSS-LAGUERRE FORMULA)  
 C/028/A GSL15A NUMERICAL INTEGRATION  
 (15-POINT GAUSS-LAGUERRE FORMULA)  
 C/028/B GSL15B NUMERICAL INTEGRATION  
 (15-POINT GAUSS-LAGUERRE FORMULA)  
 C/029/B GSL16B NUMERICAL INTEGRATION  
 (16-POINT GAUSS-LAGUERRE FORMULA)  
 C/030/B GSL17B NUMERICAL INTEGRATION  
 (17-POINT GAUSS-LAGUERRE FORMULA)  
 C/031/B GSL18B NUMERICAL INTEGRATION  
 (18-POINT GAUSS-LAGUERRE FORMULA)  
 C/032/B GSL19B NUMERICAL INTEGRATION  
 (19-POINT GAUSS-LAGUERRE FORMULA)  
 C/033/B GSL20B NUMERICAL INTEGRATION  
 (20-POINT GAUSS-LAGUERRE FORMULA)  
 C/034/B GSL21B NUMERICAL INTEGRATION  
 (21-POINT GAUSS-LAGUERRE FORMULA)  
 C/035/B GSL22B NUMERICAL INTEGRATION  
 (22-POINT GAUSS-LAGUERRE FORMULA)  
 C/036/B GSL23B NUMERICAL INTEGRATION  
 (23-POINT GAUSS-LAGUERRE FORMULA)  
 C/037/B GSL24B NUMERICAL INTEGRATION  
 (24-POINT GAUSS-LAGUERRE FORMULA)  
 C/038/B GSL25B NUMERICAL INTEGRATION  
 (25-POINT GAUSS-LAGUERRE FORMULA)  
 C/039/B GSL26B NUMERICAL INTEGRATION  
 (26-POINT GAUSS-LAGUERRE FORMULA)  
 C/040/A GSH7A NUMERICAL INTEGRATION  
 ( 7-POINT GAUSS-HERMITE FORMULA)  
 C/041/A GSH8A NUMERICAL INTEGRATION  
 ( 8-POINT GAUSS-HERMITE FORMULA)

C/042/A GSH9A NUMERICAL INTEGRATION  
 ( 9-POINT GAUSS-HERMITE FORMULA)  
 C/043/A GSH10A NUMERICAL INTEGRATION  
 (10-POINT GAUSS-HERMITE FORMULA)  
 C/043/B GSH10B NUMERICAL INTEGRATION  
 (10-POINT GAUSS-HERMITE FORMULA)  
 C/044/A GSH11A NUMERICAL INTEGRATION  
 (11-POINT GAUSS-HERMITE FORMULA)  
 C/044/B GSH11B NUMERICAL INTEGRATION  
 (11-POINT GAUSS-HERMITE FORMULA)  
 C/045/A GSH12A NUMERICAL INTEGRATION  
 (12-POINT GAUSS-HERMITE FORMULA)  
 C/045/B GSH12B NUMERICAL INTEGRATION  
 (12-POINT GAUSS-HERMITE FORMULA)  
 C/046/A GSH13A NUMERICAL INTEGRATION  
 (13-POINT GAUSS-HERMITE FORMULA)  
 C/046/B GSH13B NUMERICAL INTEGRATION  
 (13-POINT GAUSS-HERMITE FORMULA)  
 C/047/A GSH14A NUMERICAL INTEGRATION  
 (14-POINT GAUSS-HERMITE FORMULA)  
 C/047/B GSH14B NUMERICAL INTEGRATION  
 (14-POINT GAUSS-HERMITE FORMULA)  
 C/048/A GSH15A NUMERICAL INTEGRATION  
 (15-POINT GAUSS-HERMITE FORMULA)  
 C/048/B GSH15B NUMERICAL INTEGRATION  
 (15-POINT GAUSS-HERMITE FORMULA)  
 C/049/B GSH16B NUMERICAL INTEGRATION  
 (16-POINT GAUSS-HERMITE FORMULA)  
 C/050/B GSH17B NUMERICAL INTEGRATION  
 (17-POINT GAUSS-HERMITE FORMULA)  
 C/051/B GSH18B NUMERICAL INTEGRATION  
 (18-POINT GAUSS-HERMITE FORMULA)  
 C/052/B GSH19B NUMERICAL INTEGRATION  
 (19-POINT GAUSS-HERMITE FORMULA)  
 C/053/B GSH20B NUMERICAL INTEGRATION  
 (20-POINT GAUSS-HERMITE FORMULA)  
 C/054/B GSH21B NUMERICAL INTEGRATION  
 (21-POINT GAUSS-HERMITE FORMULA)  
 C/055/B GSH22B NUMERICAL INTEGRATION  
 (22-POINT GAUSS-HERMITE FORMULA)  
 C/056/B GSH23B NUMERICAL INTEGRATION  
 (23-POINT GAUSS-HERMITE FORMULA)  
 C/057/B GSH24B NUMERICAL INTEGRATION  
 (24-POINT GAUSS-HERMITE FORMULA)  
 C/058/B GSH25B NUMERICAL INTEGRATION  
 (25-POINT GAUSS-HERMITE FORMULA)  
 C/059/B GSH26B NUMERICAL INTEGRATION  
 (26-POINT GAUSS-HERMITE FORMULA)  
 C/060/B GSH27B NUMERICAL INTEGRATION  
 (27-POINT GAUSS-HERMITE FORMULA)

C/061/B GSH28B NUMERICAL INTEGRATION  
(28-POINT GAUSS-HERMITE FORMULA)  
C/062/B GSH29B NUMERICAL INTEGRATION  
(29-POINT GAUSS-HERMITE FORMULA)  
C/063/B GSH30B NUMERICAL INTEGRATION  
(30-POINT GAUSS-HERMITE FORMULA)  
C/064/B GSH31B NUMERICAL INTEGRATION  
(31-POINT GAUSS-HERMITE FORMULA)

## D. 代数方程式

D/001/A CARDNA ALGEBRAIC EQUATION OF DEGREE 3 (CAPDANO'S  
METHOD)  
D/001/B CARDNB ALGEBRAIC EQUATION OF DEGREE 3 (CAPDANO'S  
METHOD)  
D/002/A FERRAA ALGEBRAIC EQUATION OF DEGREE 4 (FERRARI'S  
METHOD)  
D/002/B FERRAB ALGEBRAIC EQUATION OF DEGREE 4 (FERRARI'S  
METHOD)  
D/003/A BAIR1A ALGEBRAIC EQUATION (BAIRSTOW'S METHOD)  
D/003/B BAIR1B ALGEBRAIC EQUATION (BAIRSTOW'S METHOD)  
D/004/A REGFLA ALGEBRAIC EQUATION (REGULA-FALSI METHOD)  
D/004/B REGFLB ALGEBRAIC EQUATION (REGULA-FALSI METHOD)  
D/005/A CNWTNA ALGEBRAIC EQUATION WITH COMPLEX COEFFICIENTS  
(NEWTON-RAPHSON METHOD)  
D/005/B CNWTNB ALGEBRAIC EQUATION WITH COMPLEX COEFFICIENTS  
(NEWTON-RAPHSON METHOD)  
D/006/A JARATA ALGEBRAIC EQUATION (JARRATT'S MODIFIED  
METHOD)  
D/006/B JARATB ALGEBRAIC EQUATION (JARRATT'S MODIFIED  
METHOD)

## E. 連立一次方程式

E/001/A GAUSEA LINEAR EQUATIONS (GAUSS-SEIDEL METHOD)  
E/001/B GAUSEB LINEAR EQUATIONS (GAUSS-SEIDEL METHOD)  
E/002/A GAUELA LINEAR EQUATIONS (GAUSS ELIMINATION METHOD)  
E/002/B GAUELB LINEAR EQUATIONS (GAUSS ELIMINATION METHOD)  
E/003/A SWEEPA LINEAR EQUATIONS (SWEEP OUT METHOD)  
E/003/B SWEEPB LINEAR EQUATIONS (SWEEP OUT METHOD)  
E/004/A CSWEPA LINEAR EQUATIONS WITH COMPLEX COEFFICIENTS  
(SWEEP OUT METHOD)  
E/004/B CSWEPB LINEAR EQUATIONS WITH COMPLEX COEFFICIENTS  
(SWEEP OUT METHOD)  
E/005/A TRIDGA TRIDIAGONAL EQUATIONS (GAUSS'S ELIMINATION  
METHOD)  
E/006/A SIMEQA LINEAR EQUATIONS AND DETERMINANTS (SWEEP OUT  
METHOD)  
E/006/B SIMEQB LINEAR EQUATIONS AND DETERMINANTS (SWEEP OUT  
METHOD)

## F. 常微分方程式

F/001/A RKGA ORDINARY DIFFERENTIAL EQUATION (RUNGE-KUTTA-  
GILL METHOD)  
F/001/B RKGB ORDINARY DIFFERENTIAL EQUATION (RUNGE-KUTTA-  
GILL METHOD)  
F/002/A SRKGA SYSTEM OF ORDINARY DIFFERENTIAL EQUATIONS  
(RUNGE-KUTTA-GILL METHOD)  
F/002/B SRKGB SYSTEM OF ORDINARY DIFFERENTIAL EQUATIONS  
(RUNGE-KUTTA-GILL METHOD)  
F/003/A SRKG2A SYSTEM OF ORDINARY DIFFERENTIAL EQUATIONS  
(RUNGE-KUTTA-GILL METHOD, WITH CHANGING  
INTERVAL AUTOMATICALLY)  
F/003/B SRKG2B SYSTEM OF ORDINARY DIFFERENTIAL EQUATIONS  
(RUNGE-KUTTA-GILL METHOD, WITH CHANGING  
INTERVAL AUTOMATICALLY)  
F/004/A HAMPCA SYSTEM OF SIMULTANEOUS ORDINARY DIFFERENTIAL  
EQUATIONS (HAMMING'S METHOD)  
F/004/B HAMPCH SYSTEM OF SIMULTANEOUS ORDINARY DIFFERENTIAL  
EQUATIONS (HAMMING'S METHOD)

## G. 行列

G/001/A MADDA MATRIX ADDITION  
G/001/B MADDB MATRIX ADDITION  
G/002/A MSUBA MATRIX SUBTRACTION  
G/002/B MSUBB MATRIX SUBTRACTION  
G/003/A MMUL1A MATRIX MULTIPLICATION 1  
G/003/B MMUL1B MATRIX MULTIPLICATION 1  
G/004/A MMUL2A MATRIX MULTIPLICATION 2  
G/004/B MMUL2B MATRIX MULTIPLICATION 2  
G/005/A MTRNSA MATRIX TRANSPOSITION  
G/005/B MTRNSB MATRIX TRANSPOSITION  
G/006/A MUNITA UNIT MATRIX  
G/006/B MUNITB UNIT MATRIX  
G/007/A MPRTA MATRIX PRINT  
G/007/B MPRTB MATRIX PRINT  
G/008/A MDETA DETERMINANT  
G/008/B MDETB DETERMINANT  
G/009/A MINVA MATRIX INVERSION (SWEEP OUT METHOD)  
G/009/B MINVB MATRIX INVERSION (SWEEP OUT METHOD)  
G/010/A JACORA EIGENVALUES AND EIGENVECTORS OF REAL  
SYMMETRIC MATRIX (THRESHOLD-JACOBI METHOD)  
G/010/B JACORB EIGENVALUES AND EIGENVECTORS OF REAL  
SYMMETRIC MATRIX (THRESHOLD-JACOBI METHOD)  
G/013/A HERMTA EIGENVALUES AND EIGENVECTORS OF HERMITIAN  
MATRIX  
G/013/B HERMTB EIGENVALUES AND EIGENVECTORS OF HERMITIAN  
MATRIX  
G/014/A DABAA EIGENVALUES OF REAL MATRIX (DANILEVSKII'S  
METHOD)

G/014/B DABAB. EIGENVALUES OF REAL MATRIX (DANILEVSKII'S METHOD)  
 G/015/A DANEWA EIGENVALUES AND EIGENVECTORS OF REAL MATRIX (DANILEVSKII'S METHOD)  
 G/015/B DANEWB EIGENVALUES AND EIGENVECTORS OF REAL MATRIX (DANILEVSKII'S METHOD)  
 G/016/A EVECA EIGENVECTORS OF REAL MATRIX (SWEEP OUT METHOD)  
 G/016/B EVECB EIGENVECTORS OF REAL MATRIX (SWEEP OUT METHOD)  
 G/017/A HOUSA EIGENVALUES OF REAL SYMMETRIC MATRIX (HOUSEHOLDER METHOD)  
 G/017/B HOUSB EIGENVALUES OF REAL SYMMETRIC MATRIX (HOUSEHOLDER METHOD)  
 G/018/A HESQRA EIGENVALUES AND EIGENVECTORS OF REAL MATRIX (QR METHOD)  
 G/018/B HESQRB EIGENVALUES AND EIGENVECTORS OF REAL MATRIX (QR METHOD)  
 G/019/A HOUS2A EIGENVALUES AND EIGENVECTORS OF REAL SYMMETRIC MATRIX (HOUSEHOLDER METHOD)  
 G/019/B HOUS2B EIGENVALUES AND EIGENVECTORS OF REAL SYMMETRIC MATRIX (HOUSEHOLDER METHOD)  
 G/020/A WREGNA EIGENVALUES OF REAL MATRIX (QR METHOD)  
 G/020/B WREGNB EIGENVALUES OF REAL MATRIX (QR METHOD)  
 G/021/A GAVECA EIGENVECTORS OF REAL MATRIX (INVERSE ITERATION METHOD)  
 G/021/B GAVECB EIGENVECTORS OF REAL MATRIX (INVERSE ITERATION METHOD)  
 G/022/A MINV2A INVERSE MATRIX  
 G/022/B MINV2B INVERSE MATRIX  
 G/023/A GAVE2A RIGHT HAND SIDE AND LEFT HAND SIDE EIGENVECTORS OF REAL MATRIX (INVERSE ITERATION METHOD)  
 G/023/B GAVE2B RIGHT HAND SIDE AND LEFT HAND SIDE EIGENVECTORS OF REAL MATRIX (INVERSE ITERATION METHOD)  
 G/025/A THJACA EIGENVALUES AND EIGENVECTORS OF HERMITIAN MATRIX (THRESHOLD JACOBI METHOD)  
 G/025/B THJACB EIGENVALUES AND EIGENVECTORS OF HERMITIAN MATRIX (THRESHOLD JACOBI METHOD)

H. フーリエ級数

H/001/B COFOB COSINE ANALYSIS OF FOURIER SERIES  
 H/002/B SIFOB SINE ANALYSIS OF FOURIER SERIES  
 H/003/B COASSB COSINE ASSEMBLY OF FOURIER SERIES  
 H/004/B SIASSB SINE ASSEMBLY OF FOURIER SERIES  
 H/005/A FFTA FAST FOURIER TRANSFORM  
 H/005/B FFTB FAST FOURIER TRANSFORM

I. 関数近似

I/001/B LSTSQB POLYNOMIAL APPROXIMATION BY LEAST SQUARE  
 I/002/B BSTAPB BEST APPROXIMATION  
 I/003/A LAGA LAGRANGE'S INTERPOLATION  
 I/003/B LAGB LAGRANGE'S INTERPOLATION  
 I/005/A CHEBA TCHEBYSHEV APPROXIMATION (COMPUTE THE TCHEBYSHEV COEFFICIENTS)  
 I/005/B CHEBB TCHEBYSHEV APPROXIMATION (COMPUTE THE TCHEBYSHEV COEFFICIENTS)  
 I/006/A TINTA TCHEBYSHEV APPROXIMATION (COMPUTE THE FUNCTION VALUE BY USING TCHEBYSHEV COEFFICIENTS)  
 I/006/B TINTB TCHEBYSHEV APPROXIMATION (COMPUTE THE FUNCTION VALUE BY USING TCHEBYSHEV COEFFICIENTS)  
 I/007/A SPLINA SPLINE INTERPOLATION  
 I/007/B SPLINB SPLINE INTERPOLATION

J. 偏微分方程式

J/001/A ELPDEA PARTIAL DIFFERENTIAL EQUATION OF ELLIPTIC TYPE  
 J/002/A PAPDEA PARTIAL DIFFERENTIAL EQUATION OF PARABOLIC TYPE  
 J/002/B PAPDEB PARTIAL DIFFERENTIAL EQUATION OF PARABOLIC TYPE  
 J/003/A HYPDEA PARTIAL DIFFERENTIAL EQUATION OF HYPERBOLIC TYPE  
 J/003/B HYPDEB PARTIAL DIFFERENTIAL EQUATION OF HYPERBOLIC TYPE

K. 積分方程式

K/001/A INEV2A VOLTERRA'S INTEGRAL EQUATION OF SECOND KIND  
 K/001/B INEV2B VOLTERRA'S INTEGRAL EQUATION OF SECOND KIND

Z. その他

Z/001/A POADDA ADDITION OF POLYNOMIALS  
 Z/001/B PGADDB ADDITION OF POLYNOMIALS  
 Z/002/A POSUBA SUBTRACTION OF POLYNOMIALS  
 Z/002/B POSUBB SUBTRACTION OF POLYNOMIALS  
 Z/003/A POMULA MULTIPLICATION OF POLYNOMIALS  
 Z/003/B POMULB MULTIPLICATION OF POLYNOMIALS  
 Z/004/A PODIVA DIVISION OF POLYNOMIALS  
 Z/004/B PODIVB DIVISION OF POLYNOMIALS  
 Z/006/A NORRNA NORMAL RANDOM NUMBERS  
 Z/007/A PCISNA POISSON RANDOM NUMBERS  
 Z/009/A COMBA BINOMIAL COEFFICIENTS  
 Z/009/B COMBB BINOMIAL COEFFICIENTS