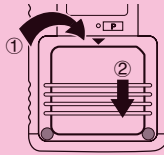


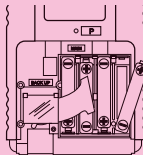
BEFORE USING THE CALCULATOR FOR THE FIRST TIME...

This calculator does not contain any main batteries when you purchase it. Be sure to perform the following procedure to load batteries, reset the calculator, and adjust the contrast before trying to use the calculator for the first time.

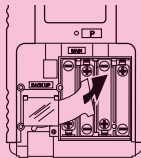
1. Remove the back cover from the calculator by pressing it in the direction indicated by arrow ①, and then sliding it in the direction indicated by arrow ②.



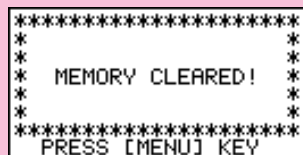
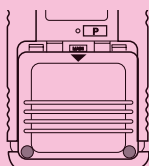
2. Load the four batteries that come with calculator.
 - Make sure that the positive (+) and negative (-) ends of the batteries are facing correctly.



3. Remove the insulating sheet at the location marked "BACK UP" by pulling in the direction indicated by the arrow.

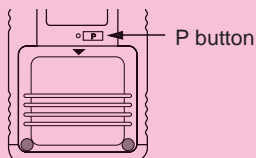


4. Replace the back cover onto the calculator and turn the calculator front side up, which should automatically turn on power and perform the memory reset operation.

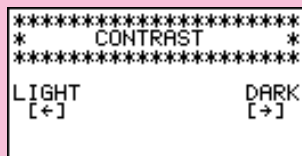


5. Press **MENU** .

If the Main Menu shown to the right is not on the display, press the P button on the back of the calculator to perform memory reset.



6. Use the cursor keys (**▲**, **▼**, **◀**, **▶**) to select the **CONT** icon and press **EXE** or simply press **sin** to display the contrast adjustment screen.

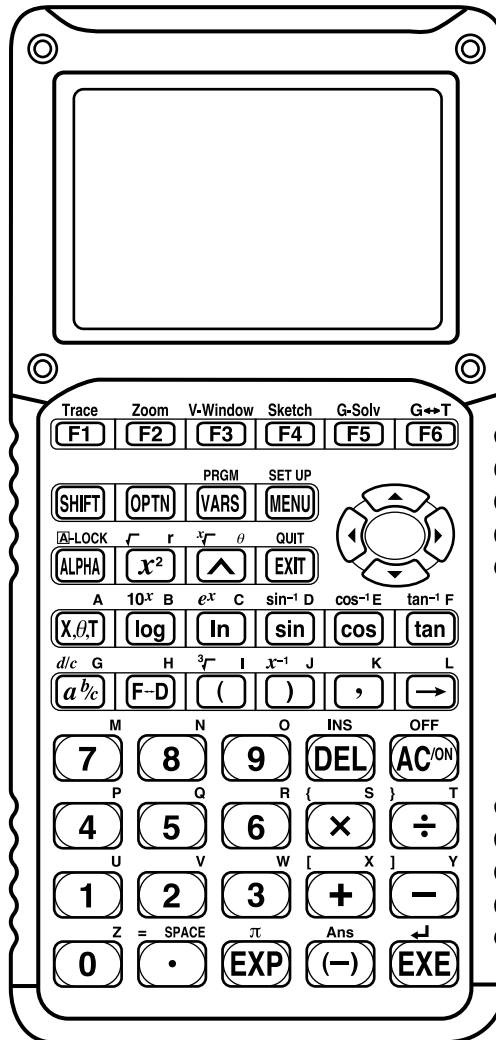


7. Use **◀** and **▶** to adjust contrast.

- **◀** makes figures on the screen lighter, while **▶** makes them darker.
- Holding down **◀** or **▶** changes the contrast setting at high speed.

8. After adjusting the contrast, press **MENU** to return to the Main Menu.

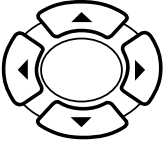
KEYS



Alpha Lock

Normally, once you press **ALPHA** and then a key to input an alphabetic character, the keyboard reverts to its primary functions immediately. If you press **SHIFT** and then **ALPHA**, the keyboard locks in alpha input until you press **ALPHA** again.

KEY TABLE

Trace F1	Page 146	Zoom F2	Page 151	V-Window F3	Page 129	Sketch F4	Page 174	G-Solv F5	Page 164	G \leftrightarrow T F6	Page 136
SHIFT	2	OPTN	31	PRGM VARS	333 33	SET UP MENU	4 3				
\square -LOCK ALPHA	2	$\sqrt{\quad}$ $\sqrt{\quad}$ x²	57 57	$\sqrt{\quad}$ θ \wedge	56 56	QUIT EXIT	55				
A X, θ, T		10^x B log	56 56	e^x C In	56 56	\sin^{-1} D sin	55 55	\cos^{-1} E cos	55 55	\tan^{-1} F tan	55 55
d/c G a^{b/c}	59 59	H F\leftrightarrowD		$\sqrt[3]{\quad}$ I (57 46	x^{-1} J)	57 46	K ,		L \rightarrow	25
M 7		N 8		O 9		INS DEL	24 23	OFF AC/ON			
P 4		Q 5		R 6		{ \times	46	} \div		T \div	46
U 1		V 2		W 3		[+	46	] -		Y -	46
Z 0		= SPACE .		π EXP	55 46	Ans (-)	49 46	\leftarrow EXE			

Quick-Start

Switching Power On And Off

Auto Power Off Function

Using Modes

Basic Calculations

Replay Features

Fraction Calculations

Exponents

Graph Functions

Dual Graph

Box Zoom

Dynamic Graph

Table Function

Welcome to the world of graphing calculators and the CASIO fx-9750G.

Quick-Start is not a complete tutorial, but it takes you through many of the most common functions, from turning the power on to graphing complex equations. When you're done, you'll have mastered the basic operation of the fx-9750G and will be ready to proceed with the rest of this manual to learn the entire spectrum of functions available.

Each step of the examples in Quick-Start is shown graphically to help you follow along quickly and easily. When you need to enter the number 57, for example, we've indicated it as follows:

Press **5** **7**

Whenever necessary, we've included samples of what your screen should look like. If you find that your screen doesn't match the sample, you can restart from the beginning by pressing the "All Clear" button **AC/ON**.

SWITCHING POWER ON AND OFF

To switch power on, press **AC/ON**.

To switch power off, press **SHIFT** **AC/ON**^{OFF}.

AUTO POWER OFF FUNCTION

Note that the unit automatically switches power off if you do not perform any operation for about six minutes (about 60 minutes when a calculation is stopped by an output command (▲)).

USING MODES

The fx-9750G makes it easy to perform a wide range of calculations by simply selecting the appropriate mode. Before getting into actual calculations and operation examples, let's take a look at how to navigate around the modes.

To select the RUN Mode

1. Press **MENU** to display the Main Menu.



2. Use     to highlight **RUN** and then press .


This is the initial screen of the RUN mode, where you can perform manual calculations, and run programs.



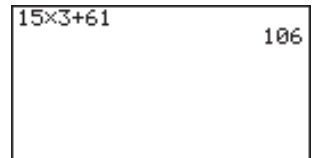
BASIC CALCULATIONS

With manual calculations, you input formulas from left to right, just as they are written on paper. With formulas that include mixed arithmetic operators and parentheses, the calculator automatically applies true algebraic logic to calculate the result.

Example: $15 \times 3 + 61$

1. Press  to clear the calculator.

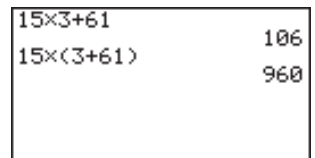
2. Press        .



Parentheses Calculations

Example: $15 \times (3 + 61)$

1. Press     
    .



Built-In Functions

The fx-9750G includes a number of built-in scientific functions, including trigonometric and logarithmic functions.

Example: $25 \times \sin 45^\circ$

Important!

Be sure that you specify Deg (degrees) as the angle unit before you try this example.

1. Press **AC/ON**.
2. Press **SHIFT** **MENU** ^{SET UP} to switch the set up display.

```

Mode           :Comp
Func Type      :Y=
Draw Type      :Connect
Derivative     :Off
Angle          :Rad
Coord          :On
Grid           :Off
|ComF|Dec|Hex|Bin|Oct
    
```

3. Press **▼** **▼** **▼** **▼** **F1** (Deg) to specify degrees as the angle unit.

```

Mode           :Comp
Func Type      :Y=
Draw Type      :Connect
Derivative     :Off
Angle         :Deg
Coord          :On
Grid           :Off
|Deg|Rad|Gra
    
```

4. Press **EXIT** to clear the menu.
5. Press **AC/ON** to clear the unit.
6. Press **2** **5** **×** **sin** **4** **5** **EXE**.

```

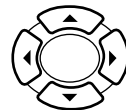
25×sin 45      17.67766953
    
```

REPLAY FEATURES

With the replay feature, simply press **◀** or **▶** to recall the last calculation that was performed. This recalls the calculation so you can make changes or re-execute it as it is.

Example: To change the calculation in the last example from $(25 \times \sin 45^\circ)$ to $(25 \times \sin 55^\circ)$

1. Press **◀** to display the last calculation.
2. Press **◀** twice to move the cursor under the 4.
3. Press **5**.
4. Press **EXE** to execute the calculation again.



```

25×sin 55      20.47880111
    
```

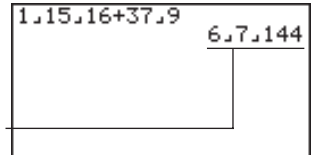

FRACTION CALCULATIONS

You can use the $\frac{a}{b}$ key to input fractions into calculations. The symbol “ \lrcorner ” is used to separate the various parts of a fraction.

Example: $1\frac{15}{16} + \frac{37}{9}$

1. Press AC/ON .

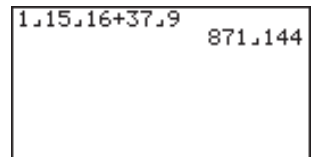
2. Press $\boxed{1}$ $\frac{a}{b}$ $\boxed{1}$ $\boxed{5}$ $\frac{a}{b}$
 $\boxed{1}$ $\boxed{6}$ $\boxed{+}$ $\boxed{3}$ $\boxed{7}$ $\frac{a}{b}$
 $\boxed{9}$ $\boxed{\text{EXE}}$.



Converting a Mixed Fraction to an Improper Fraction

While a mixed fraction is shown on the display, press SHIFT $\frac{d}{c}$ to convert it to an improper fraction.

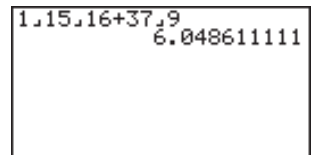
Press SHIFT $\frac{d}{c}$ again to convert back to a mixed fraction.



Converting a Fraction to Its Decimal Equivalent

While a fraction is shown on the display, press $\text{F}\leftrightarrow\text{D}$ to convert it to its decimal equivalent.

Press $\text{F}\leftrightarrow\text{D}$ again to convert back to a fraction.



EXPONENTS

Example: 1250×2.06^5

1. Press **AC/ON**.
2. Press **1** **2** **5** **0** **X** **2** **.** **0** **6**.
3. Press **^** and the ^ indicator appears on the display.
4. Press **5**. The ^5 on the display indicates that 5 is an exponent.
5. Press **EXE**.

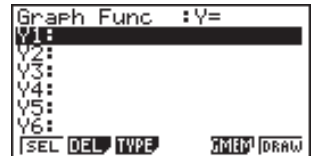
1250×2.06^5 46370.96297

GRAPH FUNCTIONS

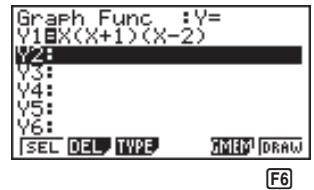
The graphing capabilities of this calculator makes it possible to draw complex graphs using either rectangular coordinates (horizontal axis: x ; vertical axis: y) or polar coordinates (angle: θ ; distance from origin: r).

Example 1: To graph $Y = X(X + 1)(X - 2)$

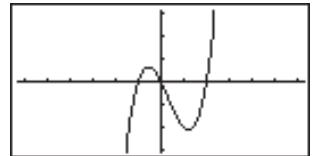
1. Press **MENU**.
2. Use **◀**, **▶**, **▲**, and **▼** to highlight **GRAPH**, and then press **EXE**.



3. Input the formula.

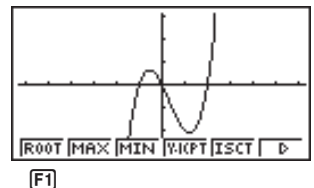


4. Press **F6** (DRAW) or **EXE** to draw the graph.

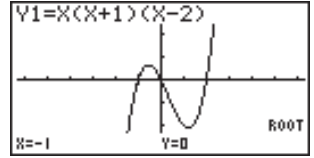


Example 2: To determine the roots of $Y = X(X + 1)(X - 2)$

1. Press **SHIFT** **F5** (G-Solv).

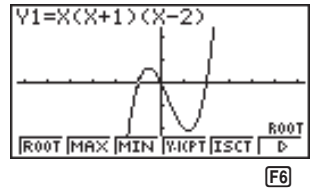


2. Press **F1** (ROOT).
 Press **▶** for other roots.

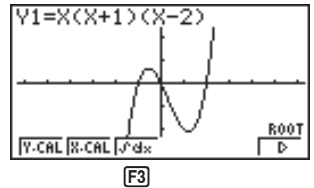


Example 3: Determine the area bounded by the origin and the $X = -1$ root obtained for $Y = X(X + 1)(X - 2)$

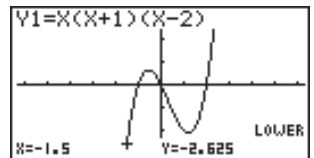
1. Press **SHIFT** **F5** (G-Solv).



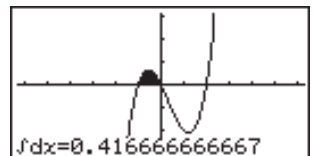
2. Press **F6** (▷).



3. Press **F3** ($\int dx$).



4. Use **▶** to move the pointer to the location where $X = -1$, and then press **EXE**. Next, use **▶** again to move the pointer to the location where $X = 0$, and then press **EXE** to input the integration range, which becomes shaded on the display.



DUAL GRAPH

With this function you can split the display between two areas and display two graphs on the same screen.

Example: To draw the following two graphs and determine the points of intersection

$$Y1 = X(X + 1)(X - 2)$$

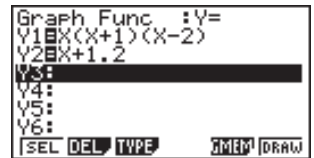
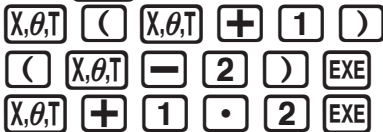
$$Y2 = X + 1.2$$

1. Press **SHIFT** **SETUP** **▼** **▼** **F1** (Grph) to specify "Graph" for the Dual Screen setting.



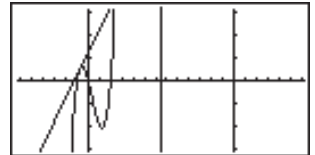
F1

2. Press **EXIT**, and then input the two functions.



F6

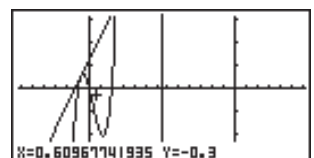
3. Press **F6** (DRAW) or **EXE** to draw the graphs.







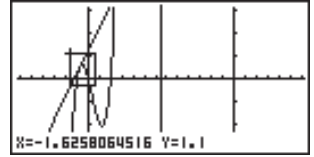
BOX ZOOM


Use the Box Zoom function to specify areas of a graph for enlargement.

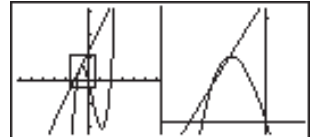
1. Press **SHIFT** **F2** (Zoom) **F1** (BOX).
2. Use **◀**, **▶**, **▲**, and **▼** to move the pointer to one corner of the area you want to specify and then press **EXE**.



3. Use , , , and  to move the pointer again. As you do, a box appears on the display. Move the pointer so the box encloses the area you want to enlarge.



4. Press , and the enlarged area appears in the inactive (right side) screen.



DYNAMIC GRAPH

Dynamic Graph lets you see how the shape of a graph is affected as the value assigned to one of the coefficients of its function changes.

Example: To draw graphs as the value of coefficient A in the following function changes from 1 to 3

$$Y = AX^2$$

1. Press .
2. Use , , , and  to highlight **DYNA**, and then press .



3. Input the formula.





4. Press **F4** (VAR) **1** **EXE** to assign an initial value of 1 to coefficient A.

```
Y1=AX2
Dynamic Var :A / ▶
A=1

SEL RANG SPEED AUTO DYNA
```

F2

5. Press **F2** (RANG) **1** **EXE** **3** **EXE** **1** **EXE** to specify the range and increment of change in coefficient A.

```
Y1=AX2
Dynamic Range
A
Start:1
End :3
Pitch:1
```

6. Press **EXIT**.

7. Press **F6** (DYNA) to start Dynamic Graph drawing. The graphs are drawn 10 times.

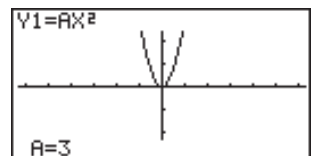
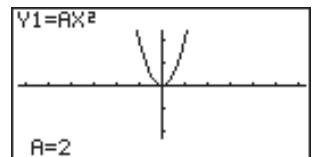
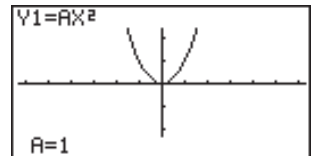
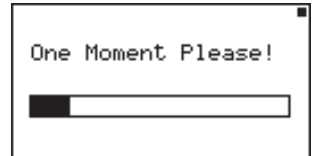


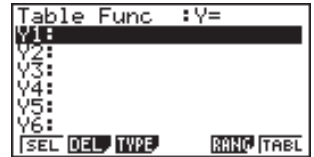
TABLE FUNCTION

The Table Function makes it possible to generate a table of solutions as different values are assigned to the variables of a function.

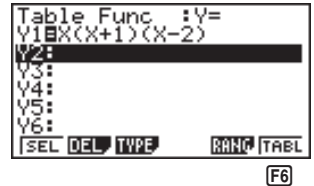
Example: To create a number table for the following function

$$Y = X(X+1)(X-2)$$

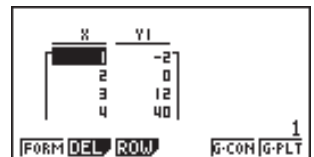
1. Press **MENU**.
2. Use **◀**, **▶**, **▲**, and **▼** to highlight **TABLE**, and then press **EXE**.



3. Input the formula.



4. Press **F6** (TABL) or **EXE** to generate the number table.



After you've completed this Quick-Start section, you are well on your way to becoming an expert user of the CASIO fx-9750G.

To learn all about the many powerful features of the fx-9750G, read on and explore!

Handling Precautions

- Your calculator is made up of precision components. Never try to take it apart.
- Avoid dropping your calculator and subjecting it to strong impact.
- Do not store the calculator or leave it in areas exposed to high temperatures or humidity, or large amounts of dust. When exposed to low temperatures, the calculator may require more time to display results and may even fail to operate. Correct operation will resume once the calculator is brought back to normal temperature.
- The display will go blank and keys will not operate during calculations. When you are operating the keyboard, be sure to watch the display to make sure that all your key operations are being performed correctly.
- Replace the main batteries once every 2 years regardless of how much the calculator is used during that period. Never leave dead batteries in the battery compartment. They can leak and damage the unit.
- Keep batteries out of the reach of small children. If swallowed, consult with a physician immediately.
- Avoid using volatile liquids such as thinner or benzine to clean the unit. Wipe it with a soft, dry cloth, or with a cloth that has been dipped in a solution of water and a neutral detergent and wrung out.
- In no event will the manufacturer and its suppliers be liable to you or any other person for any damages, expenses, lost profits, lost savings or any other damages arising out of loss of data and/or formulas arising out of malfunction, repairs, or battery replacement. The user should prepare physical records of data to protect against such data loss.
- Never dispose of batteries, the liquid crystal panel, or other components by burning them.
- When the "Low battery!" message appears on the display, replace the main power supply batteries as soon as possible.
- Be sure that the power switch is set to OFF when replacing batteries.
- If the calculator is exposed to a strong electrostatic charge, its memory contents may be damaged or the keys may stop working. In such a case, perform the All Reset operation to clear the memory and restore normal key operation.
- If the calculator stops operating correctly for some reason, use a thin, pointed object to press the P button on the back of the calculator. Note, however, that this clears all the data in calculator memory.
- Note that strong vibration or impact during program execution can cause execution to stop or can damage the calculator's memory contents.
- Using the calculator near a television or radio can cause interference with TV or radio reception.
- Before assuming malfunction of the unit, be sure to carefully reread this manual and ensure that the problem is not due to insufficient battery power, programming or operational errors.

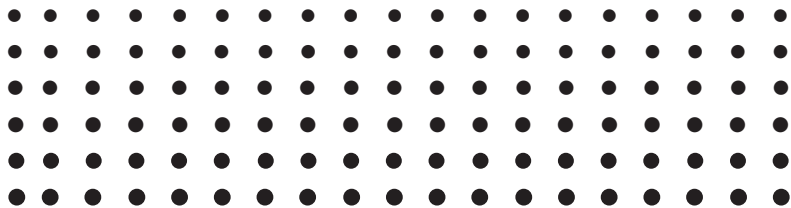
Be sure to keep physical records of all important data!

The large memory capacity of the unit makes it possible to store large amounts of data. You should note, however, that low battery power or incorrect replacement of the batteries that power the unit can cause the data stored in memory to be corrupted or even lost entirely. Stored data can also be affected by strong electrostatic charge or strong impact.

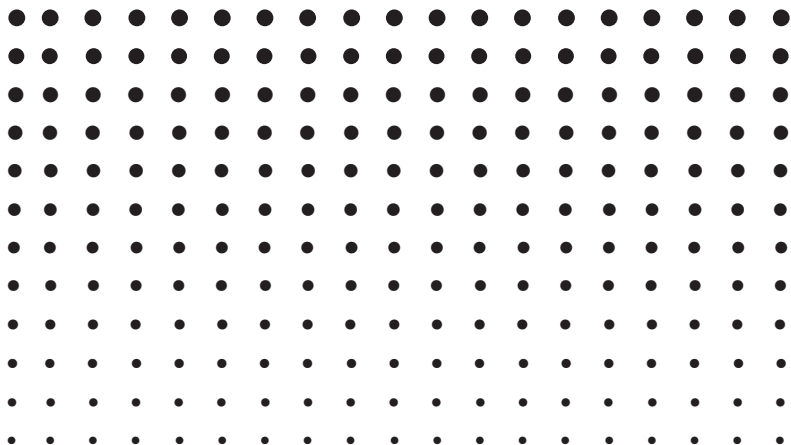
Since this calculator employs unused memory as a work area when performing its internal calculations, an error may occur when there is not enough memory available to perform calculations. To avoid such problems, it is a good idea to leave 1 or 2 kbytes of memory free (unused) at all times.

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- The options described in Chapter 20 of this manual may not be available in certain geographic areas. For full details on availability in your area, contact your nearest CASIO dealer or distributor.



fx-9750G



Contents

Getting Acquainted — Read This First!	1
1. Key Markings	2
2. Selecting Icons and Entering Modes	3
Using the Set Up Screen	4
Set Up Screen Function Key Menus	5
3. Display	10
About the Display Screen	10
About Menu Item Types	10
Exponential Display	11
Special Display Formats	12
Calculation Execution Screen	12
4. Contrast Adjustment	13
5. When you keep having problems...	14
Get the Calculator Back to its Original Mode Settings	14
In Case of Hang Up	14
Low Battery Message	14
Chapter 1 Basic Operation	15
1-1 Before Starting Calculations...	16
Setting the Angle Unit (Angle)	16
Setting the Display Format (Display)	16
Inputting Calculations	19
Calculation Priority Sequence	19
Multiplication Operations without a Multiplication Sign	20
Stacks	21
Input, Output and Operation Limitations	21
Overflow and Errors	22
Memory Capacity	22
Graphic Display and Text Display	23
Editing Calculations	23
1-2 Memory	25
Variables	25
Function Memory	26
Memory Status (MEM)	28
Clearing Memory Contents	30
1-3 Option (OPTN) Menu	31
1-4 Variable Data (VARs) Menu	33
1-5 Program (PRGM) Menu	43

Chapter 2 Manual Calculations	45
2-1 Basic Calculations	46
Arithmetic Calculations	46
Number of Decimal Places, Number of Significant Digits, Exponential Notation Range	46
Calculations Using Variables	48
2-2 Special Functions	49
Answer Function	49
Performing Continuous Calculations	49
Using the Replay Function	50
Making Corrections in the Original Calculation	50
Using Multistatements	51
2-3 Function Calculations	52
Function Menus	52
Angle Units	55
Trigonometric and Inverse Trigonometric Functions	55
Logarithmic and Exponential Functions	56
Hyperbolic and Inverse Hyperbolic Functions	56
Other Functions	57
Coordinate Conversion	58
Permutation and Combination	58
Fractions	59
Engineering Notation Calculations	60
Logical Operators (AND, OR, NOT)	61
 Chapter 3 Solve, Differential/Quadratic Differential, Integration, Maximum/Minimum Value, and Σ Calculations	 63
3-1 Function Analysis Menu	64
3-2 Solve Calculations	65
3-3 Differential Calculations	67
Applications of Differential Calculations	69
3-4 Quadratic Differential Calculations	70
Quadratic Differential Applications	71
3-5 Integration Calculations	72
Application of Integration Calculation	73
3-6 Maximum/Minimum Value Calculations	75
3-7 Σ Calculations	77
Example Σ Calculation	77
Σ Calculation Applications	78

Σ Calculation Precautions 78

Chapter 4 Complex Numbers 79

4-1 Before Beginning a Complex Number Calculation 80

4-2 Performing Complex Number Calculations 81

Arithmetic Operations 81

Reciprocals, Square Roots, and Squares 81

Absolute Value and Argument 82

Conjugate Complex Numbers 82

Extraction of Real and Imaginary Number Parts 83

4-3 Complex Number Calculation Precautions 84

Chapter 5 Binary, Octal, Decimal, and Hexadecimal Calculations 85

5-1 Before Beginning a Binary, Octal, Decimal, or Hexadecimal Calculation 86

5-2 Selecting a Number System 88

5-3 Arithmetic Operations 89

5-4 Negative Values and Logical Operations 90

Negative Values 90

Logical Operations 90

Chapter 6 Matrix Calculations 91

6-1 Before Performing Matrix Calculations 92

About Matrix Answer Memory (MatAns) 92

Creating a Matrix 92

Deleting Matrices 93

6-2 Matrix Cell Operations 95

Row Calculations 95

Row Operations 97

Column Operations 99

6-3 Modifying Matrices Using Matrix Commands 101

Matrix Data Input Format 101

Modifying Matrices Using Matrix Commands 103

6-4 Matrix Calculations 106

Matrix Arithmetic Operations 106

Matrix Scalar Product 108

Determinant 109

Matrix Transposition	110
Matrix Inversion	110
Squaring a Matrix	111
Raising a Matrix to a Power	112
Determining the Absolute Value, Integer Part, Fraction Part, and Maximum Integer of a Matrix	113

Chapter 7 Equation Calculations 115

7-1 Before Beginning an Equation Calculations	116
Entering an Equation Calculation Mode	116
Clearing Equation Memories	116
7-2 Linear Equations with Two to Six Unknowns	117
Entering the Linear Equation Mode for Two to Six Unknowns	117
Solving Linear Equations with Three Unknowns	118
Changing Coefficients	119
Clearing All the Coefficients	119
7-3 Quadratic and Cubic Equations	120
Entering the Quadratic/Cubic Equation Mode	120
Solving a Quadratic or Cubic Equation	120
Quadratic equations that produce multiple root (1 or 2) solutions or imaginary number solutions	121
Changing Coefficients	122
Clearing All the Coefficients	122
7-4 What to Do When an Error Occurs	123

Chapter 8 Graphing 125

8-1 Before Trying to Draw a Graph	126
Entering the Graph Mode	126
8-2 View Window (V-Window) Settings	127
Initializing and Standardizing the View Window	129
View Window Memory	130
8-3 Graph Function Operations	132
Specifying the Graph Type	132
Storing Graph Functions	132
Editing Functions in Memory	134
Drawing a Graph	135
8-4 Graph Memory	138
8-5 Drawing Graphs Manually	140

8-6	Other Graphing Functions	146
	Connect Type and Plot Type Graphs (Draw Type)	146
	Trace	146
	Scroll	149
	Graphing in a Specific Range	149
	Overwrite	149
	Zoom	151
	Using the Auto View Window	154
	Adjusting the Ranges of a Graph (SQR)	155
	Rounding Coordinates (RND)	156
	Converting x - and y -axis Values to Integers (INTG)	157
	Returning the View Window to Its Previous Settings	158
8-7	Picture Memory	159
8-8	Graph Background	161
Chapter 9	Graph Solve	163
9-1	Before Using Graph Solve	164
9-2	Analyzing a Function Graph	165
	Determining Roots	165
	Determining Maximums and Minimums	166
	Determining y -intercepts	167
	Determining Points of Intersection for Two Graphs	168
	Determining a Coordinate (x for a given y / y for a given x)	169
	Determining the Integral for Any Range	171
9-3	Graph Solve Precautions	172
Chapter 10	Sketch Function	173
10-1	Before Using the Sketch Function	174
10-2	Graphing with the Sketch Function	176
	Tangent	176
	Line Normal to a Curve	177
	Graphing an Inverse Function	178
	Plotting Points	179
	Turning Plot Points On and Off	181
	Drawing a Line	182
	Drawing a Circle	184
	Drawing Vertical and Horizontal Lines	185
	Freehand Drawing	185
	Comment Text	186
	Turning Pixels On and Off	187

Clearing Drawn Lines and Points 188

Chapter 11 Dual Graph 189

11-1 Before Using Dual Graph 190
 About Dual Graph Screen Types 190

11-2 Specifying the Left and Right View Window Parameters 192

11-3 Drawing a Graph in the Active Screen 194

11-4 Displaying a Graph in the Inactive Screen 195
 Before Displaying a Graph in the Inactive Screen 195
 Copying the Active Graph to the Inactive Screen 195
 Switching the Contents of the Active and Inactive Screens 196
 Drawing Different Graphs on the Active Screen and Inactive Screen 196
 Other Graph Functions with Dual Graph 199

Chapter 12 Graph-to-Table 201

12-1 Before Using Graph-to-Table 202

12-2 Using Graph-to-Table 203

12-3 Graph-to-Table Precautions 206

Chapter 13 Dynamic Graph 207

13-1 Before Using Dynamic Graph 208

13-2 Storing, Editing, and Selecting Dynamic Graph Functions 209

13-3 Drawing a Dynamic Graph 210
 10-time Continuous Drawing 213
 Continuous Drawing 215
 Stop & Go Drawing 216

13-4 Using Dynamic Graph Memory 218

13-5 Dynamic Graph Application Examples 220

Chapter 14 Implicit Function Graphs 223

14-1 Before Graphing an Implicit Function 224
 Entering the CONICS Mode 224

14-2 Graphing an Implicit Function 225

14-3 Implicit Function Graph Analysis 228

14-4 Implicit Function Graphing Precautions 233

Chapter 15 Table & Graph	235
15-1 Before Using Table & Graph	236
15-2 Storing a Function and Generating a Numeric Table	237
Variable Specifications	237
Generating a Table	238
Specifying the function type	240
15-3 Editing and Deleting Functions	241
15-4 Editing Tables and Drawing Graphs	242
Row Operations	243
Deleting a Table	244
Graphing a Function	245
15-5 Copying a Table Column to a List	248
Chapter 16 Recursion Table and Graph	249
16-1 Before Using the Recursion Table and Graph Function	250
16-2 Inputting a Recursion Formula and Generating a Table	251
16-3 Editing Tables and Drawing Graphs	256
Before Drawing a Graph for a Recursion Formula	257
Drawing a Convergence/Divergence Graph (WEB graph)	258
Chapter 17 List Function	263
List Data Linking	264
17-1 List Operations	265
17-2 Editing and Rearranging Lists	268
Editing List Values	268
Sorting List Values	270
17-3 Manipulating List Data	272
Accessing the List Data Manipulation Function Menu	272
17-4 Arithmetic Calculations Using Lists	278
Error Messages	278
Inputting a List into a Calculation	278
Recalling List Contents	280
Graphing a Function Using a List	280
Inputting Scientific Calculations into a List	280
Performing Scientific Function Calculations Using a List	281
17-5 Switching Between List Files	282

Chapter 18 Statistical Graphs and Calculations	283
18-1 Before Performing Statistical Calculations	284
18-2 Paired-Variable Statistical Calculation Examples	285
Inputting Data into Lists	285
Plotting Data	285
Plotting a Scatter Diagram	286
Changing Graph Parameters	286
1. Graph draw/non-draw status (SELECT)	287
2. General graph settings (SET)	288
Drawing an xy Line Graph	292
Selecting the Regression Type	292
Displaying Statistical Calculation Results	293
Graphing Statistical Calculation Results	293
18-3 Calculating and Graphing Single-Variable Statistical Data	294
Drawing a Histogram (Bar Graph)	294
Med-Box Graph (Med-Box)	294
Mean-box Graph	294
Normal Distribution Curve	295
Line Graph	295
Displaying Single-Variable Statistical Results	296
18-4 Calculating and Graphing Paired-Variable Statistical Data	297
Linear Regression Graph	297
Med-Med Graph	297
Quadratic/Cubic/Quartic Regression Graph	298
Logarithmic Regression Graph	299
Exponential Regression Graph	299
Power Regression Graph	300
Displaying Paired-Variable Statistical Results	301
Copying a Regression Graph Formula to the Graph Mode	302
Multiple Graphs	302
18-5 Other Graphing Functions	304
Manual Graphing	304
Setting the Width of a Histogram/Line Graph	304
18-6 Performing Statistical Calculations	305
Single-Variable Statistical Calculations	305
Paired-Variable Statistical Calculations	306
Regression Calculation	306
Estimated Value Calculation (\hat{x} , \hat{y})	307
Probability Distribution Calculation and Graphing	308
Probability Graphing	311


Chapter 19 Programming	313
19-1 Before Programming	314
19-2 Programming Examples	315
19-3 Debugging a Program	321
19-4 Calculating the Number of Bytes Used by a Program	322
19-5 Secret Function	323
19-6 Searching for a File	325
19-7 Searching for Data Inside a Program	327
19-8 Editing File Names and Program Contents	328
19-9 Deleting a Program	332
19-10 Useful Program Commands	333
19-11 Command Reference	337
Command Index	337
Basic Operation Commands	338
Program Commands (COM)	339
Program Control Commands (CTL)	343
Jump Commands (JUMP)	345
Clear Commands (CLR)	347
Display Commands (DISP)	347
Input/Output Commands (I/O)	350
Conditional Jump Relational Operators (REL)	352
19-12 Text Display	353
19-13 Using Calculator Functions in Programs	354
Using Matrix Row Operations in a Program	354
Using Graph Functions in a Program	355
Using Dynamic Graph Functions in a Program	356
Using Table & Graph Functions in a Program	357
Using Recursion Table & Graph Functions in a Program	358
Using List Sort Functions in a Program	359
Using Statistical Calculations and Graphs in a Program	359
Performing Statistical Calculations	361
Chapter 20 Data Communications	363
20-1 Connecting Two Units	364
20-2 Connecting the Unit with a Personal Computer	365
20-3 Connecting the Unit with a CASIO Label Printer	366
20-4 Before Performing a Data Communication Operation	367

20-5	Performing a Data Transfer Operation	368
20-6	Screen Send Function	372
20-7	Data Communications Precautions	373
Chapter 21	Program Library	375
1.	Prime Factor Analysis	376
2.	Greatest Common Measure	378
3.	<i>t</i> -Test Value	380
4.	Circle and Tangents	382
5.	Rotating a Figure	389
Appendix	.....	393
Appendix A	Resetting the Calculator	394
Appendix B	Power Supply	396
	Replacing Batteries	396
	About the Auto Power Off Function	398
Appendix C	Error Message Table	399
Appendix D	Input Ranges	401
Appendix E	2-byte Command Table	404
Appendix F	Specifications	405
Index	.....	410
Command Index	.....	416
Key Index	.....	417


Getting Acquainted

— Read This First!

The symbols in this manual indicate the following messages.

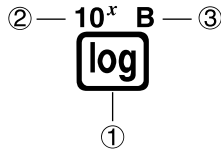
 : Important notes

 : Notes

 : Reference pages
P.000

1. Key Markings

Many of the calculator's keys are used to perform more than one function. The functions marked on the keyboard are color coded to help you find the one you need quickly and easily.



	Function	Key Operation
①	log	
②	10^x	
③	B	

The following describes the color coding used for key markings.

Color	Key Operation
Orange	Press and then the key to perform the marked function.
Red	Press and then the key to perform the marked function.

2. Selecting Icons and Entering Modes

This section describes how to select an icon in the Main Menu to enter the mode you want.

•To select an icon

1. Press **[MENU]** to display the Main Menu.

[MENU]

Currently selected icon →











2. Use the cursor keys (**[←]**, **[→]**, **[↑]**, **[↓]**) to move the highlighting to the icon you want.
3. Press **[EXE]** to display the initial screen of the mode whose icon you selected.

- You can also enter a mode without highlighting an icon in the Main Menu by inputting the number or letter marked in the lower right corner of the icon.
- Use only the procedures described above to enter a mode. If you use any other procedure, you may end up in a mode that is different than the one you thought you selected.

The following explains the meaning of each icon.

Icon	Meaning
	Use this mode for arithmetic calculations and function calculations, and for calculations involving binary, octal, decimal and hexadecimal values.
	Use this mode to perform single-variable (standard deviation) and paired-variable (regression) statistical calculations, and to draw statistical graphs.
	Use this mode for storing and editing matrices.
	Use this mode for storing and editing numeric data.
	Use this mode to store graph functions and to draw graphs using the functions.
	Use this mode to store graph functions and to draw multiple versions of a graph by changing the values assigned to the variables in a function.

Icon	Meaning
	Use this mode to store functions, to generate a numeric table of different solutions as the values assigned to variables in a function change, and to draw graphs.
	Use this mode to store recursion formulas, to generate a numeric table of different solutions as the values assigned to variables in a function change, and to draw graphs.
	Use this mode to draw graphs of implicit functions.
	Use this mode to solve linear equations with two through six unknowns, quadratic equations, and cubic equations.
	Use this mode to store programs in the program area and to run programs.
	Use this mode to transfer memory contents or back-up data to another unit.
	Use this mode to adjust the contrast of the display.
	Use this mode to check how much memory is used and remaining, to delete data from memory, and to initialize (reset) the calculator.

■ Using the Set Up Screen

The first thing that appears when you enter a mode is the mode's set up screen, which shows the current status of settings for the mode. The following procedure shows how to change a set up.

● To change a mode set up

1. Select the icon you want and press **EXE** enter a mode and display its initial screen. Here we will enter the RUN Mode.
2. Press **SHIFT** **SETUP** to display the mode's set up screen.
 - This set up screen is just one possible example. Actual set up screen contents will differ according to the mode you are in and that mode's current settings.



Mode	:Comp
Func Type	:Y=
Draw Type	:Connect
Derivative	:Off
Angle	:Rad
Coord	:On
Grid	:Off
IComF	Dec Hex Bin Oct
F1	F2
F3	F4
F5	

3. Use the \blacktriangle and \blacktriangledown cursor keys to move the highlighting to the item whose setting you want to change.
4. Press the function key (F1) to (F6) that is marked with the setting you want to make.
5. After you are finished making any changes you want, press **EXIT** to return to the initial screen of the mode.


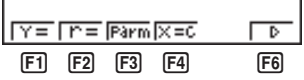

■ Set Up Screen Function Key Menus

This section details the settings you can make using the function keys in the set up display.

•Calculation/Binary, Octal, Decimal, Hexadecimal Setting Mode (Mode)

- | | |
|--|--|
| <p>F1 (Comp) General Arithmetic Calculation Mode</p> <p>F2 (Dec) Specifies decimal values as default</p> <p>F3 (Hex) Specifies hexadecimal values as default</p> <p>F4 (Bin) Specifies binary values as default</p> <p>F5 (Oct) Specifies octal values as default</p> | 
 |
|--|--|

•Graph Function Type (Func Type)

- | | |
|---|--|
| <p>F1 (Y=) Rectangular coordinate graphs</p> <p>F2 (r=) Polar coordinate graphs</p> <p>F3 (Parm) Parametric coordinate graphs</p> <p>F4 (X=c) Graphs in which value of X is constant</p> <p>F6 (\triangleright) Next menu</p>
<p>F1 (Y>) $y > f(x)$ inequality graph</p> <p>F2 (Y<) $y < f(x)$ inequality graph</p> <p>F3 (Y\geq) $y \geq f(x)$ inequality graph</p> <p>F4 (Y\leq) $y \leq f(x)$ inequality graph</p> <p>F6 (\triangleright) Previous menu</p> | 

 |
|---|--|

- The setting you make for Func Type determines the variable name that is input when you press **EXIT**.

•Graph Draw Type (Draw Type)

F1 (Con) Connection of points plotted on graph.

Draw Type :Connect

F2 (Plot) Plotting of points on graph without connection.

Con Plot

F1 **F2**

•Derivative Display Mode (Derivative)

F1 (On) Turns on display of derivative value when using Graph-to-Table, Table & Graph, and Trace.

Derivative :Off

F2 (Off) Turns off display of derivative value.

On Off

F1 **F2**

•Angle Unit (Angle)

F1 (Deg) Specifies degrees as default.

Angle :Rad

F2 (Rad) Specifies radians as default.

Deg Rad Gra

F3 (Gra) Specifies grads as default.

F1 **F2** **F3**

•Graph Pointer Coordinates (Coord)

F1 (On) Turns on display of coordinates of current graph screen pointer location.

Coord :On

F2 (Off) Turns off display of coordinates of current graph screen pointer location.

On Off

F1 **F2**

•Graph Gridlines (Grid)

F1 (On) Turns on display of graph screen gridlines.

Grid :Off

F2 (Off) Turns off display of graph screen gridlines.

On Off

F1 **F2**

•Graph Axes (Axes)

F1 (On) Turns on display of graph screen axes.

Axes :On

F2 (Off) Turns off display of graph screen axes.

On Off

F1 **F2**



P.136



P.136



P.136

•Graph Axis Labels (Label)

F1 (On) Turns on display of graph screen axis labels.

Label :Off

F2 (Off) Turns off display of graph screen axis labels.

On Off
F1 **F2**

•Display Format (Display)

F1 (Fix) Displays screen for specification of number of decimal places.

Display :Norm1

F2 (Sci) Displays screen for specification of number of significant digits.

Fix Sci Norm Eng
F1 **F2** **F3** **F4**

F3 (Norm) Switches exponential format display range.

F4 (Eng) Engineering mode.



P.18

•Statistical Graph View Window Setting (Stat Wind)

F1 (Auto) Automatic setting of view window values for statistical graph drawing.

Stat Wind :Auto

F2 (Man) Manual setting of view window values for statistical graph drawing.

Auto Man
F1 **F2**

•Graph Function Display (Graph Func)

F1 (On) Turns on display of function during graph drawing and trace.

Graph Func :On

F2 (Off) Turns off display of function during graph drawing and trace.

On Off
F1 **F2**



P.161

•Graph Background (Background)

F1 (None) No graph background.

Background :None

F2 (PICT) Displays screen for specification of picture for graph background.

None PICT
F1 **F2**



P.282

•List File Specification (List File)

F1 (File 1)~

F6 (File 6) List file number (1 to 6) specification.

List File :File1

File1	File2	File3	File4	File5	File6
F1	F2	F3	F4	F5	F6

•Dual Screen Mode (Dual Screen)

The Dual Screen Mode setting you can select differs depending upon whether you are using the GRAPH Mode set up screen or the TABLE/RECUR Mode set up screen.



P.190

GRAPH Mode

F1 (Grph) Divides screen into two parts, each of which can be used for graphing.

Dual Screen :Off

F2 (GtoT) Divides screen into two parts for generation of numeric table from graph.

GrPh	GtoT	Off
F1	F2	F3

F3 (Off) Dual Screen off.

P.202



P.247

TABLE/RECUR Mode

F1 (T+G) Divides screen into two parts, one for graphing and one for a numeric table.

Dual Screen :Off

F2 (Off) Dual Screen off.

T+G	Off
F1	F2

•Simultaneous Graph Mode (Simul Graph)

F1 (On) Turns on simultaneous graphing of all functions in memory.

Simul Graph :Off

F2 (Off) Simultaneous graphing off (graphs drawn one-by-one).

On	Off
F1	F2



P.215

•Dynamic Graph Type (Dynamic Type)

F1 (Cnt) Continuous drawing of Dynamic Graphs.

Dynamic Type:Stop

F2 (Stop) Automatic stopping of Dynamic Graph drawing after 10 draws.

Cnt	Stop
F1	F2



P.238

• **Table & Graph Generation Settings (Variable)**

F1 (Rang) Table generation and graph drawing using numeric table range.

Variable :Range

P.238

F2 (LIST) Table generation and graph drawing using list data.

Ran3 **LIST**
F1 **F2**

• **Σ Data Display Mode (Σ Display)**

F1 (On) Turns on display of Σ value on recursion numeric table.

Σ Display :Off

F2 (Off) Turns off display of Σ value.

On Off
F1 **F2**

• **Implicit Function Graph Derivative Display Mode (Slope)**

F1 (On) Turns on display of derivative at current pointer location on implicit function graph screen.

Slope :Off

F2 (Off) Turns off display of derivative.

On Off
F1 **F2**

Abbreviations

- STAT Statistics
- MAT Matrix
- DYNA Dynamic Graph
- RECUR Recursion
- EQUA Equation
- PRGM Program
- CONT Contrast
- MEM Memory

3. Display

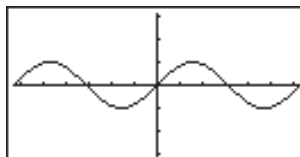
■ About the Display Screen

This calculator uses two types of display: a text display and a graphic display. The text display can show 21 columns and eight lines of characters, with the bottom line used for the function key menu, while the graph display uses an area that measures 127 (W) × 63 (H) dots.

Text Display



Graph Display



■ About Menu Item Types

This calculator uses certain conventions to indicate the type of result you can expect when you press a function key.

• Next Menu

Example: **HYP**

Selecting **HYP** displays a menu of hyperbolic functions.

• Command Input

Example: **sinh**

Selecting **sinh** inputs the sinh command.

• Direct Command Execution

Example: **DRAW**

Selecting **DRAW** executes the DRAW command.

■ Exponential Display

The calculator normally displays values up to 10 digits long. Values that exceed this limit are automatically converted to and displayed in exponential format. You can specify one of two different ranges for automatic changeover to exponential display.

Norm 1 10^{-2} (0.01) > $|x|$, $|x| \geq 10^{10}$

Norm 2 10^{-9} (0.000000001) > $|x|$, $|x| \geq 10^{10}$

● To change the exponential display range

1. Press **SHIFT** **SETUP** to display the Set Up Screen.
2. Use **▲** and **▼** to move the highlighting to "Display".
3. Press **F3** (Norm).

The exponential display range switches between Norm 1 and Norm 2 each time you perform the above operation. There is no display indicator to show you which exponential display range is currently in effect, but you can always check it by seeing what results the following calculation produces.

AC 1 ÷ 2 0 0 EXE	<div style="border-bottom: 1px solid black; padding-bottom: 5px; display: inline-block;"> $1 \div 200$ </div>	$5.E-03$ (Norm 1)
	<div style="border-bottom: 1px solid black; padding-bottom: 5px; display: inline-block;"> $1 \div 200$ </div>	0.005 (Norm 2)

All of the examples in this manual show calculation results using Norm 1.

● How to interpret exponential format

$1.2E12$	→	$1.2E+12$
----------	---	-----------

$1.2E+12$ indicates that the result is equivalent to 1.2×10^{12} . This means that you should move the decimal point in 1.2 twelve places to the right, because the exponent is positive. This results in the value 1,200,000,000,000.

$1.2E-3$	→	$1.2E-03$
----------	---	-----------

$1.2E-03$ indicates that the result is equivalent to 1.2×10^{-3} . This means that you should move the decimal point in 1.2 three places to the left, because the exponent is negative. This results in the value 0.0012.

■ Special Display Formats

This calculator uses special display formats to indicate fractions, hexadecimal values, and sexagesimal values.

● Fractions

$$\boxed{456.12.23} \quad 456.12.23 \quad \dots \text{Indicates: } 456 \frac{12}{23}$$

● Hexadecimal Values

$$\boxed{ABCDEF12} \quad ABCDEF12 \quad \dots \text{Indicates: } ABCDEF12_{(16)}, \text{ which equals } -1412567278_{(10)}$$

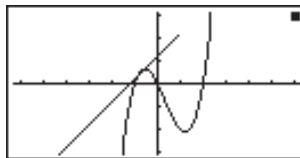
● Sexagesimal Values

$$\boxed{12.58244} \quad 12^{\circ}34'56.78'' \quad \dots \text{Indicates: } 12^{\circ} 34' 56.78''$$

- In addition to the above, this calculator also uses other indicators or symbols, which are described in each applicable section of this manual as they come up.

■ Calculation Execution Screen

Whenever the calculator is busy drawing a graph or executing a long, complex calculation or program, a black box (■) flashes in the upper right corner of the display. This black box tells you that the calculator is performing an internal operation.



4. Contrast Adjustment

Adjust the contrast whenever objects on the display appear dim or difficult to see.

•To display the contrast adjustment screen

Highlight the **CONT** icon in the Main Menu and then press **[EXE]**.

```
*****  
*          CONTRAST          *  
*****  
LIGHT          DARK  
[←]           [→]
```

Use **[◀]** and **[▶]** to adjust contrast.

- **[◀]** makes figures on the screen lighter, while **[▶]** makes them darker.
- Holding down **[◀]** or **[▶]** changes the contrast setting at high speed.

After adjusting the contrast, press **[MENU]** to return to the Main Menu.

5. When you keep having problems...

If you keep having problems when you are trying to perform operations, try the following before assuming that there is something wrong with the calculator.

■ Get the Calculator Back to its Original Mode Settings

1. In the Main Menu, select the **RUN** icon and press **EXE**.
2. Press **SHIFT** **SETUP** to display the Set Up Screen.
3. Highlight "Angle" and press **F2** (Rad).
4. Highlight "Display" and press **F3** (Norm) to select the exponential display range (Norm 1 or Norm 2) that you want to use.
5. Now enter the correct mode and perform your calculation again, monitoring the results on the display.



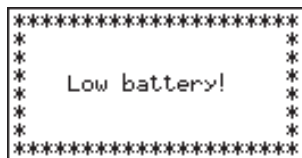
■ In Case of Hang Up

- Should the unit hang up and stop responding to input from the keyboard, press the P button on the back of the calculator to reset the memory. Note, however, that this clears all the data in calculator memory.

■ Low Battery Message

The low battery message appears while the main battery power is below a certain level whenever you press **AC/ON** to turn power on or **MENU** to display the Main Menu.

AC/ON or **MENU**



↓ About 3 seconds later



If you continue using the calculator without replacing batteries, power will automatically turn off to protect memory contents. Once this happens, you will not be able to turn power back on, and there is the danger that memory contents will be corrupted or lost entirely.

- You will not be able to perform data communications operations once the low battery message appears.

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