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You can read the recommendations in the user guide, the technical guide or the installation guide for CASIO FX-9860GII SD. You'll find the answers to all your questions on the CASIO FX-9860GII SD in the user manual (information, specifications, safety advice, size, accessories, etc.). Detailed instructions for use are in the User's Guide.

User manual CASIO FX-9860GII SD
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fx-9860GII SD
fx-9860GII
fx-9860G AU PLUS
fx-9860G Slim (Updated to OS 2.00)
fx-9860G SD (Updated to OS 2.00)
fx-9860G (Updated to OS 2.00)
fx-9860G AU (Updated to OS 2.00)
fx-9750GII
fx-7400GII
Software Version 2.00
User's Guide

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Manual abstract:

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..... -5 E-CON2 Application 1 2 3 4 5 6 7 8 9 10 11 12 E-CON2 Overview Using the Setup Wizard Using Advanced Setup Using a Custom Probe Using the MULTIMETER Mode Using Setup Memory Using Program Converter Starting a Sampling Operation Using Sample Data Memory Using the Graph Analysis Tools to Graph Data Graph Analysis Tool Graph Screen Operations Calling E-CON2 Functions from an eActivity iv Getting Acquainted -- Read This First!

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casio.com. Contrast Adjustment Adjust the contrast whenever objects on the display appear dim or difficult to see. 1. Use the cursor keys (, ,) to select the SYSTEM icon and press) to display the contrast adjustment screen.

press (, then 2. Adjust the contrast. · The · The · cursor key makes display contrast darker. cursor key makes display contrast lighter. (INIT) returns display contrast to its initial default.

. 3. To exit display contrast adjustment, press vi Chapter 1 Basic Operation 1. Keys Key Table Page 5-29 1 Page 5-5 Page 5-3 Page 5-28 Page 5-30 Page 5-1 5-24 1-2 2-7 1-2 2-30 1-22 2-14 2-14 1-25 1-23 1-18, 2-14 2-14 1-26 1-2 2-13 2-14 2-13 2-13 10-11 2-1 2-ncial) E-CON2*1 Description Use this mode to perform financial calculations and to draw cash flow and other types of graphs. Use this mode to control the optionally available EA-200 Data Analyzer. For more information about the E-CON2 mode, download the E-CON2 manual (English version only) from: <http://edu.casio.com>. Use this mode to transfer memory contents or back-up data to another unit or PC. Use this mode to manage data stored in memory.

LINK MEMORY SYSTEM Use this mode to initialize memory, adjust contrast, and to make other system settings. *1 Not included on the fx-7400G . *2 Not included on the fx-7400G /fx-9750G . About the Function Menu Use the function keys (to) to access the menus and commands in the menu bar along the bottom of the display screen. You can tell whether a menu bar item is a menu or a command by its appearance. About Display Screens This calculator uses two types of display screens: a text screen and a graph screen. The text screen can show 21 columns and 8 lines of characters, with the bottom line used for the function key menu. The graph screen uses an area that measures 127 (W) × 63 (H) dots. Text Screen Graph Screen Normal 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.

How to interpret exponential format 1.2E+12 indicates that the result is equivalent to 1.2 10¹². 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. 1-4 1.2E03 indicates that the result is equivalent to 1.2 10³. 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. You can specify one of two different ranges for automatic changeover to normal display. Norm 1

.....
... 102 (0.01) > |x|, |x| 1010 1010 Norm 2 .

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... 109 (0.000000001) > |x|, |x| All of the examples in this manual show calculation results using Norm 1. See page 2-11 for details on switching between Norm 1 and Norm 2. Special Display Formats This calculator uses special display formats to indicate fractions, hexadecimal values, and degrees/minutes/seconds values.



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Fractions ...

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..... Indicates: 456 Hexadecimal Values ...

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..... Indicates: 0ABCDEF1(16), which equals 180150001(10) Degrees/Minutes/Seconds

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..... Indicates: 12° 34' 56.78" 12 23 · 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. 3. Inputting and Editing Calculations Inputting Calculations When you are ready to input a calculation, first press to clear the display.

Next, input your calculation formulas exactly as they are written, from left to right, and press to obtain the result. Example $2 + 3 \cdot 4 + 10 = 1$ Editing Calculations Use the and keys to move the cursor to the position you want to change, and then perform one of the operations described below. After you edit the calculation, you can execute it by pressing . Or you can use to move to the end of the calculation and input more. · You can select either insert or overwrite for input*1.

With overwrite, text you input replaces the text at the current cursor location. You can toggle between insert and overwrite by performing the operation: (INS). The cursor appears as "I" for insert and as " " for overwrite. *1 With all models except the fx-7400G /fx-9750G , insert and overwrite switczng is possible only when the Linear input/output mode (page 1-29) is selected. To change a step Example To change $\cos 60$ to $\sin 60$ To delete a step Example To change 369 2 to 369 2 In the insert mode, the key operates as a backspace key.

To insert a step Example To change 2.362 to $\sin 2.362$ 1-6 Using Replay Memory The last calculation performed is always stored into replay memory. You can recall the contents of the replay memory by pressing or . If you press , the calculation appears with the cursor at the beginning. Pressing causes the calculation to appear with the cursor at the end. You can make changes in the calculation as you wish and then execute it again. · Replay memory is enabled in the Linear input/output mode only. In the Math input/output mode, the history function is used in place of replay memory. For details, see "History Function" (page 1-17).

Example 1 To perform the following two calculations $4.12 \cdot 6.4 = 26.368$ $4.12 \cdot 7.1 = 29.252$ (INS) After you press , you can press or to recall previous calculations, in sequence from the newest to the oldest (Multi-Replay Function). Once you recall a calculation, you can use and to move the cursor around the calculation and make changes in it to create a new calculation. Example 2 (One calculation back) (Two calculations back) · A calculation remains stored in replay memory until you perform another calculation. · The contents of replay memory are not cleared when you press the recall a calculation and execute it even after pressing the key.

key, so you can Making Corrections in the Original Calculation Example 14 0 2.3 entered by mistake for 14 10 2.3 1-7 Press . Cursor is positioned automatically at the location of the cause of the error. Make necessary changes.

Execute again. Using the Clipboard for Copy and Paste You can copy (or cut) a function, command, or other input to the clipboard, and then paste the clipboard contents at another location. · The procedures described here all use the Linear input/output mode. For details about the copy and paste operation while the Math input/output mode is selected, see "Using the Clipboard for Copy and Paste in the Math Input/Output Mode" (page 1-18). To specify the copy range 1.

Move the cursor (I) to the beginning or end of the range of text you want to copy and then press (CLIP). This changes the cursor to " ". 2. Use the cursor keys to move the cursor and highlight the range of text you want to copy. 3. Press (COPY) to copy the highlighted text to the clipboard, and exit the copy range specification mode. The selected characters are not changed when you copy them. To cancel text highlighting without performing a copy operation, press . To cut the text 1. Move the cursor (I) to the beginning or end of the range of text you want to cut and then press (CLIP).

This changes the cursor to " ". 1-8 2. Use the cursor keys to move the cursor and highlight the range of text you want to cut. 3. Press (CUT) to cut the highlighted text to the clipboard. Cutting causes the original characters to be deleted. Pasting Text Move the cursor to the location where you want to paste the text, and then press (PASTE). The contents of the clipboard are pasted at the cursor position. (PASTE) Catalog Function The Catalog is an alphabetic list of all the commands available on this calculator. You can input a command by calling up the Catalog and then selecting the command you want.

To use the Catalog to input a command 1. Press (CATALOG) to display an alphabetic Catalog of commands. · The screen that appears first is the last one you used for command input. · With the fx-9860G Slim, the first two lines of explanation text for the currently selected command will appear at the bottom of the screen. Pressing (HELP) will display a fullscreen view of the text for reading.

If the text does not fit within a single screen, you can use and to scroll it. (HELP) To close the help text screen, press 2. Press . (CTGY) to display the category list. · You can skip this step and go straight to step 5, if you want.

3. Use the cursor keys ((EXE) or . ,) to highlight the command category you want, and then press . This displays a list of commands in the category you selected. 1-9 4. Input the first letter of the command you want to input. This will display the first command that starts with that letter. 5. Use the cursor keys ((INPUT) or . Example ,) to highlight the command you want to input, and then press To use the Catalog to input the ClrGraph command (CATALOG) (C) ~ Pressing or (QUIT) closes the Catalog. To input a command with 1.

Press . (fx-9860G Slim only) · This will display the category selection screen. · (EXE)... {displays a list of commands in the currently selected category} (EXIT)... {exits the category selection screen} 2. Continue from step 3 of the procedure under "To use the Catalog to input a command".

4. Using the Math Input/Output Mode Important! · The fx-7400G and fx-9750G are not equipped with a Math input/output mode. Selecting "Math" for the "Input/Output" mode setting on the Setup screen (page 1-29) turns on the Math input/output mode, which allows natural input and display of certain functions, just as they appear in your textbook. · The operations in this section all are performed in the Math input/output mode. · The initial default setting for the fx-9860G SD/fx-9860G /fx-9860G AU PLUS is the Math input/output mode.

If you have changed to the Linear input/output mode, switch back to the Math input/output mode before performing the operations in this section.

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See "Using the Setup Screen" (page I-26) for information about how to switch modes. - The initial default setting for the fx-9860G Slim/fx-9860G SD/fx-9860G/fx-9860G AU is the Linear input/output mode. Switch to the Math input/output mode before performing the operations in this section. See "Using the Setup Screen" (page I-26) for information about how to switch modes.

· In the Math input/output mode, all input is insert mode (not overwrite mode) input. Note that the (INS) operation (page I-6) you use in the Linear input/output mode to switch to insert mode input performs a completely different function in the Math input/output mode. For more information, see "Using Values and Expressions as Arguments" (page I-14). 1-10 · Unless specifically stated otherwise, all operations in this section are performed in the RUN · MAT mode. Input Operations in the Math Input/Output Mode Math Input/Output Mode Functions and Symbols The functions and symbols listed below can be used for natural input in the Math input/output mode. The "Bytes" column shows the number of bytes of memory that are used up by input in the Math input/output mode. Function/Symbol Fraction (Improper) Mixed Fraction*1 Power Square Negative Power (Reciprocal) Cube Root Power Root (x 1) ((3 (x (ex) (10x) (Input from MATH menu*2) (Input from MATH menu*2) (Input from MATH menu*2) 3 Key Operation () Bytes 9 14 4 4 5 6 9 9 6 6 7 6 7 7 8 11 14*5 1 1 1)) ex 10x log(a,b) Abs (Absolute Value) Linear Differential*3 Quadratic Differential* Integral*3 Calculation*4 Matrix Parentheses Braces (Used during list input.) Brackets (Used during matrix input.) (Input from MATH menu*) (Input from MATH menu*2) (Input from MATH menu*2) (Input from MATH menu*) and ({) and ([) and () () 2 2 *1 Mixed fraction is supported in the Math input/output mode only. *2 For information about function input from the MATH function menu, see "Using the MATH Menu" described below.

*3 Tolerance cannot be specified in the Math input/output mode. If you want to specify tolerance, use the Linear input/output mode. *4 For calculation in the Math input/output mode, the pitch is always 1. If you want to specify a different pitch, use the Linear input/output mode. *5 This is the number of bytes for a 2 × 2 matrix. 1-11 Using the MATH Menu In the RUN · MAT mode, pressing (MATH) displays the MATH menu. You can use this menu for natural input of matrices, differentials, integrals, etc. · {MAT} ...

{displays the MAT submenu, for natural input of matrices} · {2 2} ... {inputs a 2 × 2 matrix} · {3 3} ...
· {inputs a 3 × 3 matrix} · {m n} ... {inputs a matrix with m lines and n columns (up to 6 × 6)} · {logab} .

.. {starts natural input of logarithm logab} · {Abs} ... {starts natural input of absolute value |X|} d f(x) x=a } dx d2 f(x) x = a 2 2 } · {d/dx } ... {starts natural input of quadratic differential dx2 b · { dx} ..

· {starts natural input of integral f(x)dx } a · {d/dx} ... {starts natural input of linear differential · { () ... {starts natural input of calculation x= f(x) } Math Input/Output Mode Input Examples This section provides a number of different examples showing how the MATH function menu and other keys can be used during Math input/output mode natural input. Be sure to pay attention to the input cursor position as you input values and data. Example 1 To input 23 + 1 Example 2 To input 1+ (2 5) 2 1-12 1 Example 3 To input 1+ 0 x + 1dx () (dx) (MATH) Example 4 To input 2 × 1 2 2 2 1 2 (MATH) (MAT) (2×2) () 1-13 () When the calculation does not fit within the display window Arrows appear at the left, right, top, or bottom edge of the display to let you know when there is more of the calculation off the screen in the corresponding direction.

When you see an arrow, you can use the cursor keys to scroll the screen contents and view the part you want. Math Input/Output Mode Input Restrictions Certain types of expressions can cause the vertical width of a calculation formula to be greater than one display line. The maximum allowable vertical width of a calculation formula is about two display screens (120 dots). You cannot input any expression that exceeds this limitation. Using Values and Expressions as Arguments A value or an expression that you have already input can be used as the argument of a function.

After you have input "(2+3)", for example, you can make it the argument of , resulting in (2+3). Example 1. Move the cursor so it is located directly to the left of the part of the expression that you want to become the argument of the function you will insert. 2. Press (INS).

· This changes the cursor to an insert cursor (). 3. Press () to insert the function. · This inserts the function and makes the parenthetical expression its argument. As shown above, the value or expression to the right of the cursor after (INS) are pressed becomes the argument of the function that is specified next. The range encompassed as the argument is everything up to the first open parenthesis to the right, if there is one, or everything up to the first function to the right (sin(30), log2(4), etc.). 1-14 This capability can be used with the following functions. Function Improper Fraction Power (Cube Root Power Root (3 (x (ex) (10x) (MATH) (MATH) (MATH) (MATH) (MATH) (dx) (MATH) (() (logab) (Abs) (d/dx) (d2/dx2) () ())) Key Operation Original Expression Expression After Insertion ex 10x log(a,b) Absolute Value Linear Differential Quadratic Differential Integral Calculation · In the Linear input/output mode, pressing page I-6 for more information. (INS) will change to the insert mode.

See Editing Calculations in the Math Input/Output Mode The procedures for editing calculations in the Math input/output mode are basically the same as those for the Linear input/output mode. For more information, see "Editing Calculations" (page I-6). Note however, that the following points are different between the Math input/output mode and the Linear input/output mode. · Overwrite mode input that is available in the Linear input/output mode is not supported by the Math input/output mode. In the Math input/output mode, input is always inserted at the current cursor location. · In the Math input/output mode, pressing the key always performs a backspace operation. · Note the following cursor operations you can use while inputting a calculation with Math input/output mode. To do this: Move the cursor from the end of the calculation to the beginning Move the cursor from the beginning of the calculation to the end Press this key: 1-15 Using Undoing and Redoing Operations You can use the following procedures during calculation expression input in the Math input/output mode (up until you press the key) to undo the last key operation and to redo the key operation you have just undone.



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- To undo the last key operation, press: (UNDO). (UNDO) again.

- To redo a key operation you have just undone, press: · You also can use UNDO to cancel an expression you have input, pressing before you pressed · key operation. After pressing to clear an (UNDO) will restore what was on the display · You also can use UNDO to cancel a cursor key operation. If you press during input and then press (UNDO), the cursor will return to where it was before you pressed · The UNDO operation is disabled while the keyboard is alpha-locked.

Pressing (UNDO) while the keyboard is alpha-locked will perform the same delete operation as the key alone. Example (UNDO) (UNDO) Math Input/Output Mode Calculation Result Display Fractions, matrices, and lists produced by Math input/output mode calculations are displayed in natural format, just as they appear in your textbook. Sample Calculation Result Displays · Fractions are displayed either as improper fractions or mixed fractions, depending on the "Frac Result" setting on the Setup screen. For details, see "Using the Setup Screen" (page 1-26). 1-16 · Matrices are displayed in natural format, up to 6×6 . A matrix that has more than six rows or columns will be displayed on a MatAns screen, which is the same screen used in the Linear input/output mode. · Lists are displayed in natural format for up to 20 elements. A list that has more than 20 elements will be displayed on a ListAns screen, which is the same screen used in the Linear input/output mode. · Arrows appear at the left, right, top, or bottom edge of the display to let you know when there is more data off the screen in the corresponding direction. You can use the cursor keys to scroll the screen and view the data you want. · Pressing (DEL) (DEL · L) while a calculation result is selected will delete both the result and the calculation that produced it. · The multiplication sign cannot be omitted immediately before an improper fraction or mixed fraction. Be sure to always input a multiplication sign in this case. Example: 2×2.5 , $\cdot A$, \cdot , or (x1) key operation cannot be followed immediately by another 1, or (x) key operation. In this case, use parentheses to keep the key operations separate.

Example: (32)1 (x1) History Function The history function maintains a history of calculation expressions and results in the Math input/output mode. Up to 30 sets of calculation expressions and results are maintained. You can also edit the calculation expressions that are maintained by the history function and recalculate. This will recalculate all of the expressions starting from the edited expression. Example To change "1+2" to "1+3" and recalculate Perform the following operation following the sample shown above. 1-17 · The value stored in the answer memory is always dependent on the result produced by the last calculation performed. If history contents include operations that use the answer memory, editing a calculation may affect the answer memory value used in subsequent calculations. - If you have a series of calculations that use the answer memory to include the result of the previous calculation in the next calculation, editing a calculation will affect the results of all the other calculations that come after it. - When the first calculation of the history includes the answer memory contents, the answer memory value is "0" because there is no calculation before the first one in history. Using the Clipboard for Copy and Paste in the Math Input/Output Mode You can copy a function, command, or other input to the clipboard, and then paste the clipboard contents at another location.

- In the Math input/output mode, you can specify only one line as the copy range. · The CUT operation is supported for the Linear input/output mode only. It is not supported for the Math input/output mode. To copy text 1. Use the cursor keys to move the cursor to the line you want to copy.

2. Press 3. Press (CLIP). The cursor will change to " ". (CPY · L) to copy the highlighted text to the clipboard.

To paste text Move the cursor to the location where you want to paste the text, and then press (PASTE). The contents of the clipboard are pasted at the cursor position. Calculation Operations in the Math Input/Output Mode This section introduces Math input/output mode calculation examples. · For details about calculation operations, see "Chapter 2 Manual Calculations". Performing Function Calculations Using Math Input/Output Mode Example $6 = 3 \times 4 \times 5 \cdot 10 \cdot 6 \cdot 4 \cdot 5$ () 3 Operation $\cos(3) = 1$ (Angle: Rad) 2 (MATH) (x 2 3 (MATH) 1-18 $3 \log 28 = 3 \cdot 7$ (logab) 2)7 ($123 \times 8 \cdot 64 \cdot 4 \cdot 4 \cdot 123 = 1.988647795$ 2 + $3 \times 64 - 4 = 10$ $\log 3 = 0.1249387366$ 4)3 3 (Abs) 2 + $3 \cdot 1 = 73 \cdot 4 \cdot 20 \cdot 5 \cdot 1.5 + 2.3i = 3 + 23i$ 2 10 2 1.5 5 2.

3 (MATH) 3 (i) (d/dx) 6 3 () 1 4 d3 2 dx (x + 4x + x - 6) x = 3 = 52 5 1 3 4 2x 2 + 3x + 4dx = 404 3 2 (MATH) 5 (MATH) 5 () (dx) 2 3 4 1 (k k=2 6 - 3k + 5 = 55) () (K) 2 6 (K) 3 (K) Performing Matrix Calculations Using Math Input/Output Mode To specify the dimensions (size) of a matrix 1. In the RUN · MAT mode, press 2. Press 3. Press (SET UP) (Math) · (MATH) to display the MATH menu. (MAT) to display the following menu. · {2 2} ... {inputs a 2×2 matrix} · {3 3} ·

.. {inputs a 3×3 matrix} · {m n} ...

{inputs an m-row \times n-column matrix (up to 6×6)} Example To create a 2-row (m n) 3-column matrix Specify the number of rows. Specify the number of columns. To input cell values Example To perform the calculation shown below 1 1 33 2 $\times 8$ 13 5 6 4 1-19 The following operation is a continuation of the example calculation on the previous page. To assign a matrix created using Math input/output mode to a MAT mode matrix Example To assign the calculation result to Mat J (Mat) (Mat) (Ans) (J) · Pressing the key while the cursor is located at the top (upper left) of the matrix will delete the entire matrix. Using Graph Modes and the EQUA Mode in the Math Input/Output Mode Using the Math input/output mode with any of the modes below lets you input numeric expressions just as they are written in your text book and view calculation results in natural display format.

Modes that support input of expressions as they are written in textbooks: RUN · MAT, e · ACT, GRAPH, DYNA, TABLE, RECUR, EQUA (SOLV) Modes that support natural display format: RUN · MAT, e · ACT, EQUA The following explanations show Math input/output mode operations in the GRAPH, DYNA, TABLE, RECUR and EQUA modes, and natural calculation result display in the EQUA mode. · See the sections that cover each calculation for details about its operation.



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· See "Input Operations in the Math Input/Output Mode" (page I-11) and "Calculation Operations in the Math Input/Output Mode" (page I-18) for details about Math input/output mode input operations and calculation result displays in the RUN · MAT mode. · e · ACT mode input operations and result displays are the same as those in the RUN · MAT mode. For information about e · ACT mode operations, see "Chapter 10 eActivity". I-20 Important! · On a model whose operating system has been updated to OS 2.00 from an older OS version, Math input/output mode input and result display are not supported in any mode except the RUN · MAT mode and e · ACT mode. Math Input/Output Mode Input in the GRAPH Mode You can use the Math input/output mode for graph expression input in the GRAPH, DYNA, TABLE, and RECUR modes. Example 1 $x x$ In the GRAPH mode, input the function $y = 2 - 2 - 1$ and then graph it. " Make sure that initial default settings are configured on the View Window.

2 GRAPH () (DRAW) Example 2 $x1$ In the GRAPH mode, input the function $y = x^2 - 1x - 1dx$ and then 04 2 graph it. Make sure that initial default settings are configured on the View Window. GRAPH (CALC) (dx) (DRAW) · Math Input/Output Mode Input and Result Display in the EQUA Mode You can use the Math input/output mode in the EQUA mode for input and display as shown below. · In the case of simultaneous equations ((SIML)) and high-order equations ((POLY)), solutions are output in natural display format (fractions, , are displayed in natural format) whenever possible. · In the case of Solver ((SOLV)), you can use Math input/output mode natural input. I-21 Example To solve the quadratic equation $x^2 + 3x + 5 = 0$ in the EQUA mode EQUA (a+bi) (POLY) (2) (SET UP) (Complex Mode) 5. Option (OPTN) Menu The option menu gives you access to scientific functions and features that are not marked on the calculator's keyboard. The contents of the option menu differ according to the mode you are in when you press the key. · The option menu does not appear if you press while binary, octal, decimal, or hexadecimal is set as the default number system. · For details about the commands included on the option (OPTN) menu, see the " item in the "PRGM Mode Command List" (page 8-37).

key" · The meanings of the option menu items are described in the sections that cover each mode. The following list shows the option menu that is displayed when the RUN · MAT (or RUN) or PRGM mode is selected. Item names below that are marked with an asterisk (*) are not included on the fx-7400G . · {LIST}

· {list function menu} · {MAT}* ... {matrix operation menu} · {CPLX} .
 .. {complex number calculation menu} · {CALC} ... {functional analysis menu} · {STAT} ... {paired-variable statistical estimated value menu} (fx-7400G)
 {menu for paired-variable statistical estimated value, distribution, standard deviation, variance, and test functions} (all models except fx-7400G) · {CONV} ..

· {metric conversion menu} · {HYP} ... {hyperbolic calculation menu} · {PROB} ... {probability/distribution calculation menu} · {NUM} ...
 {numeric calculation menu} · {ANGL} ... {menu for angle/coordinate conversion, sexagesimal input/conversion} · {ESYM} ..
 · {engineering symbol menu} · {PICT} ... {graph save/recall menu} · {FMEM} .
 .. {function memory menu} · {LOGIC} ... {logic operator menu} · {CAPT} ... {screen capture menu} · {TVM}* ..

· {financial calculation menu} · The PICT, FMEM and CAPT items are not displayed when "Math" is selected for the "Input/ Output" mode setting on the Setup screen. I-22 6. Variable Data (VARS) Menu To recall variable data, press to display the variable data menu. {V-WIN}/{FACT}/{STAT}/{GRPH}/{DYNA}/{TABLE}/{RECR}/{EQUA}/{TVM}/{Str} · Note that the EQUA and TVM items appear for function keys (and) only when you access the variable data menu from the RUN · MAT (or RUN) or PRGM mode. · The variable data menu does not appear if you press hexadecimal is set as the default number system. while binary, octal, decimal, or · Depending on the calculator model, some menu items may not be included. · For details about the commands included on the variable data (VARS) menu, see the " key" item in the "PRGM Mode Command List" (page 8-37). · Item names below that are marked with an asterisk (*) are not included on the fx-7400G . V-WIN -- Recalling V-Window values · {X}/{Y}/{T, } .

.. {x-axis menu}/{y-axis menu}/{T, menu} · {R-X}/{R-Y}/{R-T, } ...
 {x-axis menu}/{y-axis menu}/{T, menu} for right side of Dual Graph · {min}/{max}/{scal}/{dot}/{ptch} ... {minimum value}/{maximum value}/{scale}/{dot value*1}/{pitch} *1 The dot value indicates the display range (Xmax value Xmin value) divided by the screen dot pitch (126). The dot value is normally calculated automatically from the minimum and maximum values.

Changing the dot value causes the maximum to be calculated automatically. FACT -- Recalling zoom factors · {Xfct}/{Yfct} ... {x-axis factor}/{y-axis factor}
 STAT -- Recalling statistical data · {X} ... {single-variable, paired-variable x-data} x · {n}/{~ }/{ x}/{ x2}/{ x}/{sx}/{minX}/{maxX} ...

{number of data}/{mean}/{sum}/{sum of squares}/{population standard deviation}/{sample standard deviation}/{minimum value}/{maximum value} · {Y} ...
 {paired-variable y-data} · { }/{ y}/{ y2}/{ xy}/{ x}/{sy}/{minY}/{maxY} ... {mean}/{sum}/{sum of squares}/{sum of products of x-data and y-data}/{population standard deviation}/{sample standard deviation}/{minimum value}/{maximum value} · {GRPH} ... {graph data menu} · {a}/{b}/{c}/{d}/{e} .
 .. {regression coefficient and polynomial coefficients} · {r}/{r2} ...
 {correlation coefficient}/{coefficient of determination} · {MSe} ... {mean square error} · {Q1}/{Q3} ..
 · {first quartile}/{third quartile} · {Med}/{Mod} ... {median}/{mode} of input data · {Strt}/{Pitch} ... histogram {start division}/{pitch} · {PTS} ...

{summary point data menu} · {x1}/{y1}/{x2}/{y2}/{x3}/{y3} ... {coordinates of summary points} I-23 · {INPT}* ... {statistical calculation input values} x xx ·
 {n}/{~ }/{sx}/{n1}/{n2}/{~ 1}/{~ 2}/{sx1}/{sx2}/{sp} ... {size of sample}/{mean of sample}/{sample standard deviation}/{size of sample 1}/{size of sample 2}/{mean of sample 1}/{mean of sample 2}/{standard deviation of sample 1}/{standard deviation of sample 2}/{standard deviation of sample p} · {RESLT}* .
 .. {statistical calculation output values} · {TEST} ...
 {test calculation results} ^^^ · {p}/{z}/{t}/{Chi}/{F}/{ p}/{ p1}/{ p2}/{df}/{se}/{r}/{r 2}/{pa}/{Fa}/{Adj}/{SSa}/{MSa}/{pb}/{Fb}/
 {Bdf}/{SSb}/{MSb}/{pab}/{Fab}/{ABdf}/{SSab}/{MSab}/{Edf}/{SSe}/{MSe} .



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.. {p-value}/{z score}/{t score}/{ 2 value}/{F value}/{estimated sample proportion}/ {estimated proportion of sample 1}/{estimated proportion of sample 2}/{degrees of freedom}/{standard error}/{correlation coefficient}/{coefficient of determination}/ {factor A p-value}/{factor A F value}/{factor A degrees of freedom}/{factor A sum of squares}/{factor A mean squares}/{factor B p-value}/{factor B F value}/{factor B degrees of freedom}/{factor B sum of squares}/{factor B mean squares}/{factor AB p-value}/{factor AB F value}/{factor AB degrees of freedom}/{factor AB sum of squares}/{factor AB mean squares}/{error degrees of freedom}/{error sum of squares}/{error mean squares} · {INTR} ..

· {confidence interval calculation results} ^^^ · {Left}/{Right}/{ p}/{ p1}/{ p2}/{df} ... {confidence interval lower limit (left edge)}/ {confidence interval upper limit (right edge)}/{estimated sample proportion}/ {estimated proportion of sample 1}/{estimated proportion of sample 2}/{degrees of freedom} · {DIST} ... {distribution calculation results} · {p}/{xInv}/{x1Inv}/{x2Inv}/{zLow}/{zUp}/{tLow}/{tUp} ...

{probability distribution or cumulative distribution calculation result (p-value)}/{inverse Student-t, 2, F, binomial, Poisson, geometric or hypergeometric cumulative distribution calculation result}/{inverse normal cumulative distribution upper limit (right edge) or lower limit (left edge)}/{inverse normal cumulative distribution upper limit (right edge)}/{normal cumulative distribution lower limit (left edge)}/{normal cumulative distribution upper limit (right edge)}/{Student-t cumulative distribution lower limit (left edge)}/{Student-t cumulative distribution upper limit (right edge)} GRPH -- Recalling graph functions · {Y}/{r} ... {rectangular coordinate or inequality function}/{polar coordinate function} · {Xt}/{Yt} ... parametric graph function {Xt}/{Yt} · {X} ... {X=constant graph function} · Press these keys before inputting a value to specify a memory area.

DYNA* -- Recalling dynamic graph setup data · {Strt}/{End}/{Pitch} ... {coefficient range start value}/{coefficient range end value}/ {coefficient value increment} TABL -- Recalling table setup and content data · {Strt}/{End}/{Pitch} ..

· {table range start value}/{table range end value}/{table value increment} · {Reslt*1} ... {matrix of table contents} *1 The Reslt item appears only when the TABL menu is displayed in the RUN · MAT (or RUN) and PRGM modes.

1-24 RECR* -- Recalling recursion formula*1, table range, and table content data · {FORM} ... {recursion formula data menu} · {an}/{an+1}/{an+2}/{bn}/{bn+1}/{bn+2}/{cn}/{cn+1}/{cn+2} ... {an}/{an+1}/{an+2}/{bn}/{bn+1}/{bn+2}/{cn}/{cn+1}/{cn+2} expressions · {RANG} ... {table range data menu} · {Strt}/{End} .

.. table range {start value}/{end value} · {a0}/{a1}/{a2}/{b0}/{b1}/{b2}/{c0}/{c1}/{c2} ... {a0}/{a1}/{a2}/{b0}/{b1}/{b2}/{c0}/{c1}/{c2} value · {anSt}/{bnSt}/{cnSt} ... origin of {an}/{bn}/{cn} recursion formula convergence/divergence graph (WEB graph) · {Reslt*2}* ..

· {matrix of table contents*3} *1 An error occurs when there is no function or recursion formula numeric table in memory. *2 "Reslt" is available only in the RUN · MAT and PRGM modes. *3 Table contents are stored automatically in Matrix Answer Memory (MatAns). EQUA* -- Recalling equation coefficients and solutions*1 *2 · {S-Rlt}/{S-Cof} .

.. matrix of {solutions}/{coefficients} for linear equations with two through six unknowns*3 · {P-Rlt}/{P-Cof} ...

matrix of {solution}/{coefficients} for a quadratic or cubic equation *1 Coefficients and solutions are stored automatically in Matrix Answer Memory (MatAns). *2 The following conditions cause an error. - When there are no coefficients input for the equation - When there are no solutions obtained for the equation * Coefficient and solution memory data for a linear equation cannot be recalled at the same time. 3 TVM* -- Recalling financial calculation data · {n}/{I%}/{PV}/{PMT}/{FV} ... {payment periods (installments)}/{annual interest rate}/ {present value}/{payment}/{future value} · {P/Y}/{C/Y} ... {installment periods per year}/{compounding periods per year} Str -- Str command · {Str} .

.. {string memory} 7. Program (PRGM) Menu To display the program (PRGM) menu, first enter the RUN · MAT (or RUN) or PRGM mode from the Main Menu and then press (PRGM). The following are the selections available in the program (PRGM) menu. · {COM}

· {program command menu} · {CTL}

... {program control command menu} · {JUMP} ..

... {jump command menu} · {?}

..... {input command} · { }

.....

{output command} · {CLR}

.. {clear command menu} 1-25 · {DISP}, {display command menu} · {REL} ..

..... {conditional jump relational operator menu} · {I/O}

.... {I/O control/transfer command menu} · { : } .

.....

..... {multi-statement command} · {STR} ...

.... {string command} The following function key menu appears if you press (PRGM) in the RUN · MAT (or RUN) mode or the PRGM mode while binary, octal, decimal, or hexadecimal is set as the default number system. · {Prog}.....

.. {program recall} · {JUMP}/{?}/{ }/{REL}/{ : } The functions assigned to the function keys are the same as those in the Comp mode. For details on the commands that are available in the various menus you can access from the program menu, see "Chapter 8 Programming". 8.

Using the Setup Screen The mode's Setup screen shows the current status of mode settings and lets you make any changes you want. The following procedure shows how to change a setup. To change a mode setup 1. Select the icon you want and press to enter a mode and display its initial screen. Here we will enter the RUN · MAT (or RUN) mode.

2. Press screen. (SET UP) to display the mode's Setup · This Setup screen is just one possible example. Actual Setup screen contents will differ according to the mode you are in and that mode's current settings. 3. Use the and want to change. cursor keys to move the highlighting to the item whose setting you to) that is marked with the setting you want to make. to exit the Setup screen. 4. Press the function key (5.

After you are finished making any changes you want, press Setup Screen Function Key Menus This section details the settings you can make using the function keys in the Setup screen. indicates default setting. Item names below that are marked with an asterisk (*) are not included on the fx-7400G . 1-26 Mode (calculation/binary, octal, decimal, hexadecimal mode) · {Comp} ... {arithmetic calculation mode} · {Dec}/{Hex}/{Bin}/{Oct} ... {decimal}/{hexadecimal}/{binary}/{octal} Frac Result (fraction result display format) · {d/c}/{ab/c} .

.. {improper}/{mixed} fraction Func Type (graph function type) Pressing one of the following function keys also switches the function of the

{parametric}/{rectangular coordinate (X= (y) type)} graph · {Y>}/{Y<}/{Y }/{Y }.



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$\{y>f(x)\}/\{y<f(x)\}/\{y=f(x)\}/\{y \neq f(x)\}$ inequality graph · $\{X>\}/\{X<\}/\{X \}/\{X \}$... $\{x>f(y)\}/\{x<f(y)\}/\{x=f(y)\}/\{x \neq f(y)\}$ inequality graph key. · $\{Y= \}/\{r= \}/\{Parm \}/\{X= \}$.
 .. {rectangular coordinate (Y= (x) type)}/ {polar coordinate}/ Draw Type (graph drawing method) · {Con}/ {Plot} ... {connected points}/ {unconnected points}
 Derivative (derivative value display) · {On}/ {Off} ... {display on}/ {display off} while Graph-to-Table, Table & Graph, and Trace are being used Angle
 (default angle unit) · {Deg}/ {Rad}/ {Gra} ..
 .. {degrees}/ {radians}/ {grads} Complex Mode · {Real} ... {calculation in real number range only} · $\{a+bi\}/\{r \}$... {rectangular format}/ {polar format} display
 of a complex calculation Coord (graph pointer coordinate display) · {On}/ {Off} ...
 {display on}/ {display off} Grid (graph gridline display) · {On}/ {Off} ... {display on}/ {display off} Axes (graph axis display) · {On}/ {Off} ..
 · {display on}/ {display off} Label (graph axis label display) · {On}/ {Off} ... {display on}/ {display off} Display (display format) · {Fix}/ {Sci}/ {Norm}/ {Eng} .
 .. {fixed number of decimal places specification}/ {number of significant digits specification}/ {normal display setting}/ {engineering mode} Stat Wind
 (statistical graph V-Window setting method) · {Auto}/ {Man} ... {automatic}/ {manual} Resid List (residual calculation) · {None}/ {LIST} ... {no
 calculation}/ {list specification for the calculated residual data} 1-27 List File (list file display settings) · {FILE} ..
 · {settings of list file on the display} Sub Name (list naming) · {On}/ {Off} ... {display on}/ {display off} Graph Func (function display during graph drawing and
 trace) · {On}/ {Off} ... {display on}/ {display off} Dual Screen (dual screen mode status) · {G+G}/ {GtoT}/ {Off} ...
 {graphing on both sides of dual screen}/ {graph on one side and numeric table on the other side of dual screen}/ {dual screen off} Simul Graph (simultaneous
 graphing mode) · {On}/ {Off} ... {simultaneous graphing on (all graphs drawn simultaneously)}/ {simultaneous graphing off (graphs drawn in area numeric
 sequence)} Background (graph display background) · {None}/ {PICT} ..
 · {no background}/ {graph background picture specification} Sketch Line (overlaid line type) · $\{ \}/\{ \}/\{ \}$... {normal}/ {thick}/ {broken}/ {dotted} Dynamic
 Type* (dynamic graph type) · {Cnt}/ {Stop} .
 .. {non-stop (continuous)}/ {automatic stop after 10 draws} Locus* (dynamic graph locus mode) · {On}/ {Off} ... {locus drawn}/ {locus not drawn} Y=Draw
 Speed* (dynamic graph draw speed) · {Norm}/ {High} ... {normal}/ {high-speed} Variable (table generation and graph draw settings) · {RANG}/ {LIST} ..
 {use table range}/ {use list data} Display* (value display in recursion table) · {On}/ {Off} ... {display on}/ {display off} Slope* (display of derivative at current
 pointer location in conic section graph) · {On}/ {Off} ... {display on}/ {display off} Payment* (payment period setting) · {BGN}/ {END} ...
 {beginning}/ {end} setting of payment period Date Mode* (number of days per year setting) · $\{365\}/\{360\}$... interest calculations using $\{365\}^*1/\{360\}$ days
 per year *1 The 365-day year must be used for date calculations in the TVM mode. Otherwise, an error occurs.
 1-28 Periods/YR. * (payment interval specification) · {Annu}/ {Semi} ... {annual}/ {semiannual} Ineq Type (inequality fill specification) · {AND}/ {OR} .
 .. When graphing multiple inequalities, {fill areas where all inequality conditions are satisfied}/ {fill areas where each inequality condition is satisfied}
 Simplify (calculation result auto/manual reduction specification) · {Auto}/ {Man} ... {auto reduce and display}/ {display without reduction} Q1Q3 Type (Q1/Q3
 calculation formulas) · {Std}/ {OnData} ... {Divide total population on its center point between upper and lower groups, with the median of the lower group
 Q1 and the median of the upper group Q3}/ {Make the value of element whose cumulative frequency ratio is greater than 1/4 and nearest to 1/4 Q1 and
 the value of element whose cumulative frequency ratio is greater than 3/4 and nearest to 3/4 Q3} The following items are not included on the fx-7400G /fx-9750G
 · Input/Output (input/output mode) · {Math}/ {Line}*1 .
 .. {Math}/ {Linear} input/output mode Auto Calc (spreadsheet auto calc) · {On}/ {Off} ... {execute}/ {not execute} the formulas automatically Show Cell
 (spreadsheet cell display mode) · {Form}/ {Val} ... {formula}*2/{value} Move (spreadsheet cell cursor direction)*3 · {Low}/ {Right} ..
 · {move down}/ {move right} *1 The initial default setting of the fx-9860G Slim (OS 2.00)/fx-9860G SD (OS 2.00)/fx-9860G (OS 2.00)/fx-9860G AU (OS 2.
 00) is the "Line" input/output mode. *2 Selecting "Form" (formula) causes a formula in the cell to be displayed as a formula. The "Form" does not affect any
 non-formula data in the cell. key to register cell *3 Specifies the direction the cell cursor moves when you press the input, when the Sequence command
 generates a number table, and when you recall data from List memory. 9.
 Using Screen Capture Any time while operating the calculator, you can capture an image of the current screen and save it in capture memory. To capture a
 screen image 1. Operate the calculator and display the screen you want to capture. 1-29 2. Press (CAPTURE). · This displays a memory area selection dialog
 box. 3. Input a value from 1 to 20 and then press . · This will capture the screen image and save it in capture memory area named "Capt n" (n = the value you
 input). · You cannot capture the screen image of a message indicating that an operation or data communication is in progress.
 · A memory error will occur if there is not enough room in main memory to store the screen capture. To recall a screen image from capture memory This
 operation is possible only while the Linear input/output mode is selected. 1. In the RUN · MAT (or RUN) mode, press () (CAPT)((CAPT) on the fx-7400G)
 (RCL). 2. Enter a capture memory number in the range of 1 to 20, and then press · This displays the image stored in the capture memory you specified. . . 3.
 To exit the image display and return to the screen you started from in step 1, press · You can also use the RclCapt command in a program to recall a screen
 image from capture memory.
 10. 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.
 Getting the Calculator Back to its Original Mode Settings 1. From the Main Menu, enter the SYSTEM mode. 2. Press 3. Press 4.
 Press (RSET). (STUP), and then press (Yes). to return to the Main Menu. Now enter the correct mode and perform your calculation again, monitoring the
 results on the display.



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1-30 Restart and Reset Restart Should the calculator start to act abnormally, you can restart it by pressing the RESTART button (P button). Note, however, that you should only use the RESTART button only as a last resort. Normally, pressing the RESTART button reboots the calculator's operating system, so programs, graph functions and other data in calculator memory is retained. RESTART button P button fx-9860G SD fx-9860G AU PLUS Important! fx-9750G fx-7400G fx-9860G SD fx-9860G Slim The calculator backs up user data (main memory) when you turn power off and loads the backed up data when you turn power back on. When you press the RESTART button, the calculator restarts and loads backed up data. This means that if you press the RESTART button after you edit a program, graph function, or other data, any data that has not been backed up will be lost.

Reset Use reset when you want to delete all data currently in calculator memory and return all mode settings to their initial defaults. Before performing the reset operation, first make a written copy of all important data. For details, see "Reset" (page 12-3). **Low Battery Message** If the following message appears on the display, immediately turn off the calculator and replace batteries as instructed. 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 after the low battery message appears. 1-31 Chapter 2 Manual Calculations 1. Basic Calculations Arithmetic Calculations · Enter arithmetic calculations as they are written, from left to right. · Use the key to input the minus sign before a negative value.

· Calculations are performed internally with a 15-digit mantissa. The result is rounded to a 10-digit mantissa before it is displayed. · For mixed arithmetic calculations, multiplication and division are given priority over addition and subtraction. Example $56 \times (12) \div (2.5) = 268$.
 $8(2 + 3) \times 102 = 500$ $2 + 3 \times (4 + 5) = 29$ 2 6 56 2 3 4 12 3 4 5 key) may be omitted, no 1 5 2.5 2 *1 Operation 2 6 = 0.3 4x5 *1 Final closed parentheses (immediately before operation of the matter how many are required. Number of Decimal Places, Number of Significant Digits, Normal Display Range [SET UP]- [Display] -[Fix] / [Sci] / [Norm] · Even after you specify the number of decimal places or the number of significant digits, internal calculations are still performed using a 15-digit mantissa, and displayed values are stored with a 10-digit mantissa. Use Rnd of the Numeric Calculation Menu (NUM) (page 2-12) to round the displayed value off to the number of decimal place and significant digit settings.
 · Number of decimal place (Fix) and significant digit (Sci) settings normally remain in effect until you change them or until you change the normal display range (Norm) setting. Example 1 100 6 = 16.66666666... Operation 100 4 decimal places 5 significant digits Cancels specification (SET UP) (Fix) (SET UP) (Sci) (SET UP) (Norm) 6 Display 16.66666667 Condition *1 16.6667 *1 1.6667E+01 16.66666667 *1 Displayed values are rounded off to the place you specify.

2-1 Example 2 200 7 14 = 400 Operation 200 7 14 Display 400 400.000 7 Ans 14 28.571 I 400.000 Condition 3 decimal places Calculation continues using display capacity of 10 digits (SET UP) (Fix) 200 · If the same calculation is performed using the specified number of digits: 200 The value stored internally is rounded off to the number of decimal places specified on the Setup screen. You can also specify the number of decimal places for rounding of internal values for a specific calculation. (Example: To specify rounding to two decimal places) () () (NUM)* 7 Ans 14 200 (RndFix) (Ans) 7 2 28.571 28.571 I 399.994 28.571 RndFix(Ans,2) 28.

570 Ans I 399.980 (Rnd) 14 *fx-7400GII: (NUM) Calculation Priority Sequence This calculator employs true algebraic logic to calculate the parts of a formula in the following order: Type A functions · Coordinate transformation Pol (x, y), Rec (r,) · Functions that include parentheses (such as derivatives, integrations, , etc.) d/dx, d2/dx2, dx, , Solve, FMin, FMax, List Mat, Fill, Seq, SortA, SortD, Min, Max, Median, Mean, Augment, Mat List, P(, Q(, R(, t(, RndFix, logab · Composite functions*1, List, Mat, fn, Yn, rn, Xtn, Ytn, Xn Type B functions With these functions, the value is entered and then the function key is pressed. x2, x1, x!, ° ' ' ', ENG symbols, angle unit °, r, g Power/root^(xy), x Fractions a b/c Abbreviated multiplication format in front of , memory name, or variable name. 2 , 5A, Xmin, F Start, etc.

Type C functions With these functions, the function key is pressed and then the value is entered. , 3 , log, In, ex, 10x, sin, cos, tan, sin1, cos1, tan1, sinh, cosh, tanh, sinh1, cosh1, 2-2 tanh1, (, d, h, b, o, Neg, Not, Det, Trn, Dim, Identity, Ref, Rref, Sum, Prod, Cuml, Percent, List, Abs, Int, Frac, Intg, Arg, Conjg, ReP, ImP Abbreviated multiplication format in front of Type A functions, Type C functions, and parenthesis. 2 3, A log2, etc. Permutation, combination nPr, nCr Metric conversion commands , ÷, Int÷, Rnd +, Relational operators =, >, <, , And (logical operator), and (bitwise operator) Or, Xor (logical operator), or, xor, xnor (bitwise operator) *1 You can combine the contents of multiple function memory (fn) locations or graph memory (Yn, rn, Xtn, Ytn, Xn) locations into composite functions. Specifying fn1(fn2), for example, results in the composite function fn1^fn2 (see page 5-7).

A composite function can consist of up to five functions. Example $2+3(\log \sin 2 2 3 4 5 6 2 1 + 6.8) = 22.07101691$ (angle unit = Rad) · You cannot use a differential, quadratic differential, integration, , maximum/minimum value, Solve, RndFix or logab calculation expression inside of a RndFix calculation term. · When functions with the same priority are used in series, execution is performed from right to left. exln 120 ex{ln(120)} Otherwise, execution is from left to right. · Compound functions are executed from right to left. · Anything contained within parentheses receives highest priority. Calculation Result Irrational Number Display (fx-9860GII SD/fx-9860GII/fx-9860G AU PLUS only) You can configure the calculator to display calculation results in irrational number format (including or) by selecting "Math" for the "Input/Output" mode setting on the Setup screen. Example $2+8=3 2 ()$ (Input/Output: Math) () 2-3 Calculation Result Display Range with Display of a calculation result in format is supported for result with Calculation results in format take one of the following forms.



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in up to two terms. $a, b, d, a', d', b', e, c, f$. The following are the ranges for each of the coefficients (a, b, c, d, e, f) can be displayed in the calculation result format. $1 < a < 100, 1 < b < 1000, 1 < c < 100, 0 < d < 100, 0 < e < 1000, 1 < f < 100$ format even. In the cases shown below, a calculation result may be able to be displayed in if their coefficients (a, c, d) are outside the above ranges. A format calculation result uses a common denominator. $a' + d' b e c f b e a' + d' c' c'$ is the least common multiple of c and f . Since the calculation result uses a common denominator, calculation result still may be displayed using the format even when coefficients (a', c', d') are outside the corresponding range of coefficients (a, c, d). Example: $3 \frac{2}{3} + 11 = 11 \frac{10}{3}$ Calculation

Examples This calculation: $2 \frac{3}{5} = \frac{6}{5}$ $4 \frac{5}{3} = \frac{148.492424}{1} (= 105 \frac{2}{3})$ *1 Produces this type of display: format Decimal format $35 \frac{2}{150} = 8.485281374$ *1 $25 \frac{2}{3} = 35.32566285 (= 115 \frac{46}{3})$ *1 Decimal format format Decimal format $2 + 3 + 8 = 3 + 3 \frac{2}{3} + 5 = 5.595754113$ *2 *1 Decimal format because values are outside of range. *2 Decimal format because calculation result has three terms. The calculation result is displayed using decimal format even if an intermediate result goes greater than two terms. Example: $(1 + 2 + 3)(1 - 2 - 3) = 8.98979486$. If the calculation formula has a term and a term that cannot be displayed as a fraction, the calculation result will be displayed in decimal format.

Example: $\log 3 + 2 = 1.891334817$ $2 - 4 = -4$ *2 Calculation Result Display Range with A calculation results is displayed using format in the following cases. When the calculation result can be displayed in the form n/n is an integer up to $\backslash 106$. When the calculation result can be displayed in the form a/b However, {number of a digits + number of b digits + number of c digits} must be 9 or less when the above a or is reduced. *1 *2 Also, the maximum number of allowable c digits is c c 2 three.

* *1 When $c < b$, the number of a, b, and c digits are counted when the fraction is converted from an improper fraction (b) to a mixed fraction (a/b or b/c or b/c). * *2 When "Manual" is specified for the Setup screen "Simplify" setting, the calculation result may be displayed in decimal format, even if these conditions are met. Calculation Examples This calculation: $78 \frac{2}{9} = 156 \frac{2}{9} = 3490636.164 (= 11111104 \frac{2}{9})$ *3 = $105 \frac{71}{103} = 105 \frac{2}{129} = 1619$ *4 Produces this type of display: format Decimal format format Decimal format $2 \frac{123456}{105} = 2 \frac{568}{824} = 2.58$ *3 Decimal format because calculation result integer part is $\backslash 106$ or greater. *4 Decimal format because number of denominator digits is four or greater for the a/b form. Multiplication Operations without a Multiplication Sign You can omit the multiplication sign (\times) in any of the following operations. Before Type A functions (negative signs Example 1 on page 2-2) and Type C functions (on page 2-2), except for $3, 2\sin 30, 10 \log 1.2, 2^2 \text{Pol}(5, 12)$, etc. Before constants, variable names, memory names Example $2 \times 2, 2AB, 3Ans, 3Y1$, etc.

Before an open parenthesis Example $3(5 + 6), (A + 1)(B - 1)$, etc. 2-5 Overflow and Errors Exceeding a specified input or calculation range, or attempting an illegal input causes an error message to appear on the display. Further operation of the calculator is impossible while an error message is displayed. For details, see the "Error Message Table" on page -1. Most of the calculator's keys are inoperative while an error message is displayed. Press to clear the error and return to normal operation. Memory Capacity Each time you press a key, either one byte or two bytes is used. Some of the functions that require one byte are: $\pi, \sin, \cos, \tan, \log, \ln, \ln, \ln$. Some of the functions that take up two bytes are $d/dx, \text{Mat}, \text{Xmin}, \text{If}, \text{For}, \text{Return}, \text{DrawGraph}, \text{SortA}, \text{PxlOn}, \text{Sum}$, and $\text{an}+1$. The required number of bytes to input functions and commands is different in the Linear input/output mode and the Math input/output mode. For details about the number of bytes required for each function in the Math input/output mode, see page 1-11. 2. Special Functions Calculations Using Variables Example Operation $193.2 \div 23 = 8.4$ $193.2 \div 28 = 6.9$ (A) (A) (A) $23 \div 28$ Display $193.2 \div 8.4 = 6$.

9 Memory Variables (Alpha Memory) This calculator comes with 28 variables as standard. You can use variables to store values you want to use inside of calculations. Variables are identified by single-letter names, which are made up of the 26 letters of the alphabet, plus r and π . The maximum size of values that you can assign to variables is 15 digits for the mantissa and 2 digits for the exponent. Variable contents are retained even when you turn power off. To assign a value to a variable [value] Example 1 [variable name] To assign 123 to variable A (A) 2-6 Example 2 To add 456 to variable A and store the result in variable B (A) (B) To assign the same value to more than one variable [value] [first variable name] (~) [last variable name] You cannot use "r" or " π " as a variable name. Example To assign a value of 10 to variables A through F (A) (~) (F) String Memory You can store up to 20 strings (named Str 1 to Str 20) in string memory. Stored strings can be output to the display or used inside functions and commands that support the use of strings as arguments. For details about string operations, see "Strings" (page 8-18). Example To assign string "ABC" to Str 1 and then output Str 1 to the display (A -LOCK) (B) (C) (Str) * fx-7400GII: (Str) String is displayed justified left.

Perform the above operation in the Linear input/output mode. It cannot be performed in the Math input/output mode. (Str) * (Str) (A) (Releases Alpha Lock.) Function Memory [OPTN]-[FMEM] Function memory is convenient for temporary storage of often-used expressions. For longer term storage, we recommend that you use the GRAPH mode for expressions and the PRGM mode for programs. {STO}/{RCL}/{fn}/{SEE} ... {function store}/{function recall}/{function area specification as a variable name inside an expression}/{function list} 2-7 To store a function Example To store the function $(A+B)$ (AB) as function memory number 1 (A) (A) (STO) * fx-7400GII: (FMEM) (B) (B) (FMEM) * If the function memory number to which you store a function already contains a function, the previous function is replaced with the new one. You can also use to store a function in function memory in a program.

Perform the above operation in the Linear input/output mode. It cannot be performed in the Math input/output mode. (Str) * (Str) (A) (Releases Alpha Lock.) Function Memory [OPTN]-[FMEM] Function memory is convenient for temporary storage of often-used expressions. For longer term storage, we recommend that you use the GRAPH mode for expressions and the PRGM mode for programs. {STO}/{RCL}/{fn}/{SEE} ... {function store}/{function recall}/{function area specification as a variable name inside an expression}/{function list} 2-7 To store a function Example To store the function $(A+B)$ (AB) as function memory number 1 (A) (A) (STO) * fx-7400GII: (FMEM) (B) (B) (FMEM) * If the function memory number to which you store a function already contains a function, the previous function is replaced with the new one. You can also use to store a function in function memory in a program.

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