

User's Guide

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EEE Yönetmeliğine Uygundur



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1. Important Information

- The displays and illustrations (such as key markings) shown in this User's Guide are for illustrative purposes only, and may differ somewhat from the actual items they represent.
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- Be sure to keep all user documentation handy for future reference.

2. Sample Operations

Sample operations in this manual are indicated by a icon. Unless specifically stated, all sample operations assume that the calculator is in its initial default setup.

3. Initializing the Calculator

Perform the following procedure when you want to initialize the calculator and return the calculation mode and setup to their initial default settings. Note that this operation also clears all data currently in calculator memory.

(CLR) (All)

4. Safety Precautions

Battery

- Keep batteries out of the reach of small children.
- Use only the type of battery specified for this calculator in this manual.

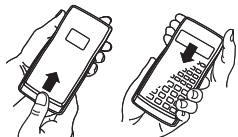
5. Handling Precautions

- Dim figures on the display of the calculator indicate that battery power is low. Continued use of the calculator when the battery is low can result in improper operation. Replace the battery as soon as possible when display figures becomes dim. Even if the calculator is operating normally, replace the battery at least once every two years. A dead battery can leak, causing damage to and malfunction of the calculator. Never leave a dead battery in the calculator.**
- The battery that comes with the calculator discharges slightly during shipment and storage. Because of this, it may require replacement sooner than the normal expected battery life.**
- Do not use an oxyride battery* or any other type of nickel-based primary battery with this product. Incompatibility between such batteries and product specifications can result in shorter battery life and product malfunction.**
- Avoid use and storage of the calculator in areas subjected to temperature extremes, and large amounts of humidity and dust.**
- Do not subject the calculator to excessive impact, pressure, or bending.**
- Never try to take the calculator apart.**
- Use a soft, dry cloth to clean the exterior of the calculator.**
- Whenever discarding the calculator or batteries, be sure to do so in accordance with the laws and regulations in your particular area.**

* Company and product names used in this manual may be registered trademarks or trademarks of their respective owners.

6. Removing the Hard Case

Before using the calculator, slide its hard case downwards to remove it, and then affix the hard case to the back of the calculator as shown in the illustration nearby.



7. Turning Power On and Off

Press to turn on the calculator.
 Press (OFF) to turn off the calculator.

Auto Power Off

Your calculator will turn off automatically if you do not perform any operation for about 10 minutes.

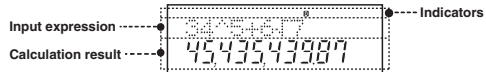
8. Adjusting Display Contrast

- Press the a number of times until you reach the setup screen shown to the right. 1 2
- Press .
- Use and to adjust contrast.
- After the setting is the way you want, press .

Important: If adjusting display contrast does not improve display readability, it probably means that battery power is low. Replace the battery.

9. Reading the Display

The display of the calculator shows expressions you input, calculation results, and various indicators.



10. Specifying the Calculation Mode

When you want to perform this type of operation:	Perform this key operation:
General calculations	(COMP)
Standard deviation	(SD)
Regression calculations	(REG)
Equation solution	(EQN)

Note: • The initial default calculation mode is the COMP Mode.
 • Mode indicators appear in the upper part of the display. Be sure to check the current calculation mode (COMP, SD, REG) and angle unit setting (Deg, Rad, Gra) before beginning a calculation.

11. Configuring the Calculator Setup

Pressing the key more than once displays additional setup screens. Underlined () settings are initial defaults.

Deg Rad Gra Specifies degrees, radians or grads as the angle unit for value input and calculation result display.	1 2 3
--	-------

Note: In this manual, the symbol next to a sample operation indicates degrees.

Fix Sci Norm Specifies the number of digits for display of a calculation result.	1 2 3
---	-------

Fix: The value you specify (from 0 to 9) controls the number of decimal places for displayed calculation results. Calculation results are rounded off to the specified digit before being displayed.
 Example: $100 \div 7 = 14.286$ (Fix 3)

Sci: The value you specify (from 1 to 10) controls the number of significant digits for displayed calculation results. Calculation results are rounded off to the specified digit before being displayed.
 Example: $1 \div 7 = 1.4286 \times 10^{-1}$ (Sci 5)

Norm: Selecting one of the two available settings (**Norm 1**, Norm 2) determines the range in which results will be displayed in non-exponential format. Outside the specified range, results are displayed using exponential format.
 Norm 1: $10^{-2} > |x|, |x| \leq 10^{10}$ Norm 2: $10^{-9} > |x|, |x| \leq 10^{10}$
 Example: $1 \div 200 = 5 \times 10^{-3}$ (Norm 1); 0.005 (Norm 2)

1 2	
$a+bi$ $r\angle\theta$	

1 2	
ab/c d/c	

a+bi **r∠θ** (EQN Mode only) Specifies either rectangular coordinates ($a+bi$) or polar coordinates ($r\angle\theta$) for EQN Mode solutions. The "r∠θ" indicator is displayed while polar coordinates ($r\angle\theta$) are selected.

ab/c **d/c** Specifies either mixed fraction (ab/c) or improper fraction (d/c) for display of fractions in calculation results.

Dot **Comma** Specifies whether to display a dot or a comma for the calculation result decimal point. A dot is always displayed during input.

Dot: Period decimal point, comma separator

Comma: Comma decimal point, period separator

■ Initializing Calculation Mode and Setup

To return the calculation mode and setup to the initial defaults shown below, press (CLR) (Mode) .

Calculation Mode: COMP
Angle Unit: Deg
Exponential Display Format: Norm 1

Fraction Display Format: a/b
Decimal Point Character: Dot

12. Inputting Expressions and Values

$4 \times \sin 30 \times (30 + 10 \times 3) = 120$ 30 30 10 3 $4 \times \sin 30 \times (30 + 120)$

Note: • The memory area used for calculation input can hold 79 "steps". One step is taken up each time you press a number key or arithmetic operator key ($+$, $-$, \times , \div). A or key operation does not take up a step, so inputting (x^2), for example, takes up only one step. • Whenever you input the 73rd step of any calculation, the cursor changes from " " to "■" to let you know memory is running low.

■ Calculation Priority Sequence

When the priority of two expressions is the same, the calculation is performed from left to right.

1st	Function with parentheses: Pol(x, y), Rec(r, θ)
2nd	Type A functions: With these functions, the value is entered and then the function key is pressed. (x^y , x^2 , x^{-1} , $x!$, $^{\circ}$, $^{\circ}$, $^{\circ}$, $^{\circ}$, $^{\circ}$, $^{\circ}$, $^{\circ}$, $^{\circ}$, $^{\circ}$)
3rd	Powers and roots: $^{\circ}$, $^{\circ}$
4th	Fractions
5th	Implied multiplication of π , e (natural logarithm base), memory name, or variable name: 2π , $3e$, $5A$, πA , etc.
6th	Type B functions: With these functions, the function key is pressed and then the value is entered. ($\sqrt{\quad}$, $^{\circ}$, \log , \ln , e^x , 10^x , \sin , \cos , \tan , \sin^{-1} , \cos^{-1} , \tan^{-1} , \sinh , \cosh , \tanh , \sinh^{-1} , \cosh^{-1} , \tanh^{-1} , (-))
7th	Implied multiplication of Type B functions: $2\sqrt{3}$, $\text{Alog}2$, etc.
8th	Permutation (nPr), combination (nCr)
9th	Multiplication, division (\times , \div)
10th	Addition, subtraction ($+$, $-$)

• The negative sign ($-$) is treated as a Type B function, so particular care is required when the calculation includes a high-priority Type A function, or power or root operations.
 Example: $(-2)^4 = 16$; $-2^4 = -16$

■ Making Corrections During Input

- Use and to move the cursor to the location you want.
- Press to delete the number or function at the current cursor position.
- Press (INS) to change to an insert cursor I . Inputting something while the insert cursor is on the display inserts the input at the insert cursor position.
- Pressing (INS), or returns to the normal cursor from the insert cursor.

13. Basic Calculations

■ Fraction Calculations

$\frac{2}{3} + \frac{1}{2} = 1\frac{1}{6}$ 3 1 2 $1\frac{1}{6}$

Note: • Mixing fractions and decimal values in a calculation will cause the result to be displayed as a decimal value. • Fractions in calculation results are displayed after being reduced to their lowest terms.

To switch a calculation result between improper fraction and mixed fraction format: Press (d/c).

To switch a calculation result between fraction and decimal format: Press .

■ Percent Calculations

$150 \times 20\% = 30$ 150 20 (%) **30.**

Calculate what percentage of 880 is 660. (75%)
 660 880 (%) **75.**

Increase 2500 by 15%. (2875)
 2500 15 (%) **2875.**

Discount 3500 by 25%. (2625)
 3500 25 (%) **2625.**

Discount the sum of 168, 98, and 734 by 20%. (800)
 168 98 734 (STO) (A) 20 (%) **800.**

* As shown here, if you want to use the current Ans (answer) memory value in a mark up or discount calculation, you need to assign the Ans memory value into a variable and then use the variable in the mark up/discount calculation.

300 grams are added to a test sample originally weighing 500 grams, producing a final test sample of 800 grams. What percent of 500 grams is 800 grams? (160%)
 300 500 (%) **160.**

What is the percentage change when a value is increased from 40 to 46? (15%)
 46 40 (%) **15.**

■ Degree, Minute, Second (Sexagesimal) Calculations

The following is the input format for a sexagesimal value: (degrees) (minutes) (seconds) .

Note: You must always input something for the degrees and minutes, even if they are zero.

$2^{\circ}20'30'' + 39^{\circ}30'' = 3^{\circ}00'00''$
 2 20 30 39 30 **3^{\circ}00.**

Convert $2^{\circ}15'18''$ to its decimal equivalent.
 2 15 18 **2.255**
 (Converts decimal to sexagesimal.) (\leftarrow) **2^{\circ}15'18.**

■ Multi-Statements

You can use the colon character ($:$) to connect two or more expressions and execute them in sequence from left to right when you press .

$3 + 3 : 3 \times 3$ 3 3 3 **6.Disp**

■ Using Engineering Notation

A simple key operation transforms a displayed value to engineering notation.

Transform the value 1234 to engineering notation, shifting the decimal point to the right.
 1234 **1.234x10³**
1234.x10⁰

■ Calculation History

In the COMP Mode, the calculator remembers up to approximately 150 bytes of data for the newest calculation. You can scroll through calculation history contents using and .

$1 + 1 = 2$ $2 + 2 = 4$ $3 + 3 = 6$
 1 1 2 2 2 4 3 3 6
 (Scrolls back.) **2.**
 (Scrolls back again.) **2.**

Note: Calculation history data is all cleared whenever you press , when you change to a different calculation mode, or whenever you initialize modes and settings.

■ Replay

While a calculation result is on the display, you can press or to edit the expression you used for the previous calculation.

$4 \times 3 + 2.5 = 14.5$ 4 3 2.5 **14.5**
 $4 \times 3 - 7.1 = 4.9$
 (Continuing) 7.1 **4.9**

■ Answer Memory (Ans)

The last calculation result obtained is stored in Ans (answer) memory. Ans memory contents are updated whenever a new calculation result is displayed. In addition to Ans , Ans memory contents are also updated with result whenever you press (%), , (M-), or (STO) followed by a letter (A through F, or M, X, or Y).

To divide the result of 3×4 by 30
 3 4 **Ans=30**
 (Continuing) 30 **0.4**

$123 + 456 = 579$ 123 456 **579.**
 $789 - 579 = 210$ (Continuing) 789 **210.**

■ Variables (A, B, C, D, E, F, X, Y)

Your calculator has eight preset variables named A, B, C, D, E, F, X, and Y.

To assign the result of $3 + 5$ to variable A
 3 5 (STO) (A) **8.**

To multiply the contents of variable A by 10
 (Continuing) (A) 10 **80.**

To recall the contents of variable A
 (Continuing) (A) **8.**

To clear the contents of variable A
 0 (STO) (A) **0.**

■ Independent Memory (M)

You can add calculation results to or subtract results from independent memory. The "M" appears on the display when there is any value other than zero stored in independent memory.

To clear the contents of M
 0 (STO) (M) **0.**

To add the result of 10×5 to M
 (Continuing) 10 5 **50.**

To subtract the result of $10 + 5$ from M
 (Continuing) 10 5 (M-) **15.**

To recall the contents of M
 (Continuing) (M) **35.**

Note: Variable M is used for independent memory.

■ Clearing the Contents of All Memories

Independent memory and variable contents are retained even if you press , change the calculation mode, or turn off the calculator. Perform the following procedure when you want to clear the contents of all memories.
 (CLR) (Mcl)

14. Function Calculations

π : π is displayed as 3.141592654, but $\pi = 3.14159265358980$ is used for internal calculations.

e : e is displayed as 2.718281828, but $e = 2.71828182845904$ is used for internal calculations.

sin, cos, tan, sin⁻¹, cos⁻¹, tan⁻¹: Trigonometric functions. Specify the angle unit before performing calculations. See [1.](#)

sinh, cosh, tanh, sinh⁻¹, cosh⁻¹, tanh⁻¹: Hyperbolic functions. The angle unit setting does not affect calculations. See [2.](#)

$^{\circ}$, $^{\circ}$, $^{\circ}$: These functions specify the angle unit. $^{\circ}$ specifies degrees, $^{\circ}$ radians, and $^{\circ}$ grads. Input a function from the menu that appears when you perform the following key operation: (DRG \blacktriangleright). See [3.](#)

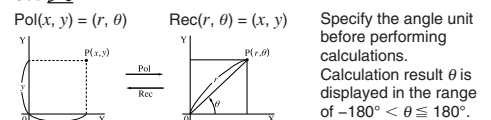
10^x , e^x : Exponential functions. See [4.](#)

log: Logarithmic function. See [5.](#)

In: Natural logarithm to base e . See [6.](#)

x^2 , x^3 , $^{\circ}$, $\sqrt{\quad}$, $\sqrt[3]{\quad}$, $^{\circ}$, x^{-1} : Powers, power roots, and reciprocals. See [7.](#)

Pol, Rec: Pol converts rectangular coordinates to polar coordinates, while Rec converts polar coordinates to rectangular coordinates. See [8.](#)



Specify the angle unit before performing calculations. Calculation result θ is displayed in the range of $-180^{\circ} < \theta \leq 180^{\circ}$.

$x!$: Factorial function. See [9.](#)

Ran#: Generates a 3-digit pseudo random number that is less than 1. See [10.](#)

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