CITIZEN
Micro HumanTech

Scientific Calculator

SR-270X College

Instruction Manual

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PARTS NO. HDBR100DE04 (SR100D)

General Guide 3

Turning on or off 3
Battery replacement 3
Auto power-off function 3
Reset operation 3
Contrast adjustment 3
Display readout 4

Before Starting Calculation 4

Using " MODE " keys 4
Using " SET UP " keys 5
Using Math Mode 6
Using " 2nd " " ALPHA " Keys 6
Making corrections during Input 6
Error Position Display Function 6
Replay function 6
Memory calculation 7
Order of operations 8
Accuracy and Capacity 8
Error conditions 10

Basic Calculations 10

Arithmetic calculation 10
Parentheses calculations 11
Percentage calculation 11
Display notations 11
Answer Function 12

Scientific Function Calculations 12

Logarithmic and Exponential functions 12
Fraction calculation 12
Angle unit conversions 13
Sexagesimal ↔ Decimal transformation 13
Trigonometric / Inverse-Tri. functions 13
Hyperbolic / Inverse-Hyp. functions 13
Coordinates transformation 14

File name : SR100DCollege_English_text_0531_final.doc
version : 10/05/31

Probability **14**
Division with Quotient and Remainder **14**
Using CALC **15**
Other functions ($\sqrt{}$, $\sqrt[3]{}$, $\sqrt[x]{}$, x^{-1}, x^2, x^3, x^y, Abs, RND, PPCM, PGCD, ENT, ENTEX) **15**
Multi-statement Function **15**

Statistical Calculations **15**

To Enter data for statistical analysis **16**
To analyze data you have entered **16**
To view or change data **18**

Equation Calculations **18**

To solve simultaneous linear equations **18**

Function Table **19**

Function Verify **19**

Proportionality Calculations **20**

To solve the value of X **20**

File name : SR100DCollege_English_text_0531_final.doc
version : 10/05/31

General Guide

■ Turning on or off

To turn the calculator on, press [ON]; To turn the calculator off, press [2nd] [OFF].

■ Battery replacement

The calculator is a dual power system which is powered by one button-type battery (G13 or L1154) and a solar cell. If the display becomes dim and difficult to read, the batteries should be replaced as soon as possible.

To replace batteries:

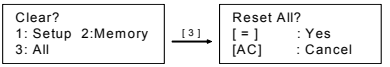
1) Remove the screw and the battery compartment cover.
2) Remove the old battery and insert a new one with polarity in correct directions, then replace the cover.
3) After changing battery, please use a pointed object to press the reset hole at the rear of this unit.

■ Auto power-off function

This calculator automatically turns off when not operated for approximately 3~9 minutes. It can be reactivated by pressing [ON] key and the memory, settings are retained.

■ Reset operation

If the calculator is on but you get unexpected results, press [2nd] [CLR] in sequence. A message appears on the display to confirm whether you want to reset the calculator and clear memory contents after selecting [3].



To clear all variables, pending operations, statistical data, answers, all previous entries, and memory, please press [=]; To cancel the reset operation without clearing the calculator, please press [AC].

If the calculator is lock and further key operations becomes impossible, please use a pointed object to press the reset hole at the rear of this unit to release the condition. It will return all settings to default settings.

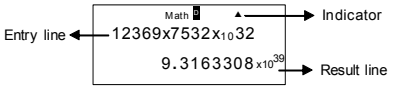
■ Contrast adjustment

Pressing the [◄] or [►] following [2nd] [SET UP] [▼] [5] (◄CONT►) keys in sequence can make the contrast of the screen lighter or darker. Holding either key down will make the display become respectively lighter or darker. After finishing your setting, press [AC] to exit.

File name : SR100DCollege_English_text_0531_final.doc
version : 10/05/31

■ Display readout

The display comprises the entry line, the result line, and indicators.



Entry line The calculator displays an entry of up to 99 digits. Entries begin on the left; those with more than 15 digits scroll to the left. Press [▶] and [◀] to move the cursor through an entry. However, whenever you input the 89th digit of any calculation, the cursor changes from " ▌ " to " ■ " to let you know memory is running low. If you still need to input more, you should divide your calculation into two or more parts.

Result line It displays a result of up to 10 digits, as well as a decimal, a negative sign, a " x10 " indicator, and a 2-digit positive or negative exponent.

Indicators The following indicators may appear on the display to indicate the current status of the calculator.

Indicator	Meaning
2nd	2nd set of function keys are active
A	Alphabetic keys are active
M	There is a number in the memory
STO	Storing variable mode is active
RCL	Recalling variable mode is active
STAT	Statistics mode is active
Math	Math style is selected as the Input/output format
D R G	Angle mode: Degrees, Radians, or Gradians
FIX	A fixed number of decimal places is in effect
SCI	A fixed number of Scientific notation is in effect
▼▲	There are earlier or later results that can be displayed
Disp	Displayed value is intermediate result when performing multi-statement function

Before Starting Calculation

■ Using " MODE " keys

Press [MODE] to display mode menus when specifying an operating mode (" 1: COMP ", " 2: STAT ", " 3: EQN ", " 4: TABLE ", " 5: VERIF ", " 6: PROP ").

COMP : Use this mode for basic calculations, including scientific calculations. (the default)

STAT : Use this mode to perform single–variable and paired–variable statistical calculations and regression calculations.

EQN : Use this mode to solve simultaneous linear equations with two or three unknowns.

TABLE : Use this mode to display a defined function in a tabular form.

VERIF : Use this mode to perform the numerical comparison and check.

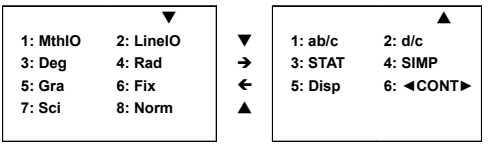
PROP : Use this mode to perform ratio expression calculations.

Give " 2: STAT " as an example:

Method : Press [MODE] and then key in directly the number of the mode, [2] , to enter the desired mode immediately.

■ Using " SET UP " keys

[2nd] [SET UP] display the setup menu that enables you to specify the input /output format, the angle mode, the numeric notation, the statistical setting or the contrast adjustment. The setup menu consist of two screens which you can jump between by using [▼] and [▲].



MthIO : Math mode displays inputs and outputs in textbook format. (the default)

LineIO : Linear mode displays inputs and outputs in a single line.

Deg : Deg mode sets the angle unit to degrees (the default)

Rad : Rad mode sets the angle unit to radians

Gra : Gra mode sets the angle unit to gradians.

Fix : Fix decimal setting (0 through 9)

Sci : Scientific notation (0 through 9)

Norm : Norm specifies the range (Norm1, Norm2) in which the results are to be displayed in exponential format or in non-exponential format (Norm1 is the default)

ab/c : ab/c displays the fraction in mixed number format

d/c : d/c displays the fraction in improper format (the default)

STAT : STAT sets the Statistical Data Editor Screen to show or hide the FREQ column

SIMP : SIMP sets the fraction simplification to Auto or Manual (Auto is the default)

Disp : Disp sets the decimal point to Dot (.) or Comma (,) (Dot is the default)

◀CONT▶ : Contrast Adjustment

■ Using Math Mode

Press [2nd] [SET UP] [1] to enter Math mode. While in math mode, the values for functions such as $\frac{9}{e}$, $A\frac{b}{c}$, $\log_a b$, Abs, 10^x, e^x, $\sqrt{}$, $\sqrt[3]{}$, x^2 , x^3 , x^{-1} , x^y , $\sqrt[x]{}$ ....can be entered and displayed in a mathematically written way. By default, this calculator is in Math mode. See Example 1~2.

■ Using " 2nd " " ALPHA " Keys

When you press [2nd], the " 2nd " indicator shown on the display indicates that you will be selecting the second function of the next key you press. If you press [2nd] by mistake, simply press [2nd] again to remove the " 2nd " indicator. For Example, [2nd] [$\sin^{-1}$] 1 [=] calculates the $\sin^{-1}$ of 1 and returns the result, 90.

When you press [ALPHA], the "A" indicator shown on the display indicates that you will be selecting the alphabetic function of the next key you press. If you press [ALPHA] by mistake, simply press [ALPHA] again to remove the " A " indicator. For Example, press [ALPHA] [A] to input the “A” on screen.

■ Making corrections during Input

The vertical blinking cursor "▌" means the calculator is in insert mode. The horizontal blinking cursor "▂" means the calculator is in overwrite mode.

By default, the calculator is in insert mode. In linear format, you can press [2nd] [INS] to switch between the two modes, whereas in Math format, you can use only the insert mode.

In insert mode, the character in front of the cursor "▌" will be deleted or inserted after you press [DEL] or enter a new character

In overwrite mode, the character at the cursor "▂" will be deleted by [DEL] key or replaced by any new character you enter.

To clear all characters, simply press [AC] in either mode.

■ Error Position Display Function

When a mathematically illegal calculation performed causes an error and an error message (See < Error conditions >) appears, press [◀] [▶] and then the error position display function will tell you with the cursor where the error is. In that case, please make necessary corrections before executing the calculation again. See Example 3.

■ Replay function

This function stores operations that just have been executed in COMP mode. After execution is completed, pressing [▼] or [▲] key will display the operation executed.

You can continue moving the cursor by [◀] or [▶] to display previous input steps and editing values or commands for subsequent execution. See Example 4.

The operation records in Memory are cleared each time when you turn off the calculator, press [ON] key, perform a “reset”, change display format or calculation mode.

When the memory is full, the oldest calculation records are deleted automatically to make room for the new ones.

■ Memory calculation

Memory variable

The calculator has seven memory variables for repeated use -- A, B, C, D, M, X, Y. You can store a real number in any of the seven memory variables. See Example 5.

- [2nd] [STO] + [A] ~ [D], [M], [X] ~ [Y] lets you store values to variables.
- [RCL] + [A] ~ [D], [M], [X] ~ [Y] recalls the value of the variable.
- [0] [2nd] [STO] + [A] ~ [D], [M], [X] ~ [Y] clears the content to a specified memory variable.
- [ALPHA] + " memory variable " lets you insert the applicable variables in a calculation.
- [2nd] [CLR] [2] [=] clears all variables.

Running memory

You should keep the following rules in mind when using running memory. See Example 6.

- Press [M+] to add a result to running memory and the " M " indicator appears when a number is stored in the memory. Press [RCL] [M] to recall the content of running memory.
- Recalling from running memory by pressing [RCL] [M] key does not affect its contents .
- Running memory is not available when you are in statistics mode.
- The memory variable M and running memory utilize the same memory area.
- In order to replace the content of the memory with the displayed number, please press [2nd] [STO] [M] key.
- To clear the content of running memory, you can press [0] [2nd] [STO] [M] in sequence.

(Note) : Besides pressing [2nd] [STO] [M] key to store a value, you can also assign values to memory variable M by [M+]. However, when [2nd] [STO] [M] is used, previous memory contents stored in variable M are cleared and replaced with the newly assigned value. When [M+] is used, values is added to present sum in memory.

■ Order of operations

Each calculation is performed from left to right and in the following order of precedence:

1) Expression inside parentheses.
2) Functions with parentheses:
   P→R, R→P, PPCM, PGCD
   sin, cos, tan, $\sin^{-1}$, $\cos^{-1}$, $\tan^{-1}$, sinh, cosh, tanh, $\sinh^{-1}$, $\cosh^{-1}$, $\tanh^{-1}$,
   log, ln, $\sqrt{\ }$, $\sqrt[3]{\ }$, 10^{x}, e^{x}, Abs, RND, ENT, ENTEX
3) Functions preceded by values, powers, power roots, for example, x^{2}, x^{3}, x^{-1}, x!, DMS, °, r, g, x^{y}, $\sqrt[x]{\ }$, %
4) Fractions
5) Negations (–)
6) Statistical estimated value calculation: $\hat{x}$, $\hat{y}$, $\hat{x}1$, $\hat{x}2$
7) nPr, nCr
8) x ,÷, ÷R
   Multiplication sign omitted immediately before π, *e*, variable, and function with parentheses: for example, 3π, 5B, Asin(30)
9) +, –

■ Accuracy and Capacity

Output digits : Up to 10 digits.

Calculating digits : Up to 16 digits

In general, every reasonable calculation is displayed up to 10 digits mantissa, or 10-digit mantissa plus 2-digit exponent up to $10^{\pm 99}$.

Numbers used as input must be within the range of the given function as follows:

Functions	Input range
sin x cos x	Deg : $0 \leqq \lvert x \rvert < 9 \times 10^{9}$ Rad : $0 \leqq \lvert x \rvert < 157079632.7$ Grad : $0 \leqq \lvert x \rvert < 1 \times 10^{10}$
tan x	Same as sin x, except when Deg : $\lvert x \rvert = 90\ (2n-1)$ Rad : $\lvert x \rvert = \frac{\pi}{2}\ (2n-1)$ Grad : $\lvert x \rvert = 100\ (2n-1)$
$\sin^{-1} x$, $\cos^{-1} x$	$0 \leqq \lvert x \rvert \leqq 1$
$\tan^{-1} x$	$0 \leqq \lvert x \rvert < 1 \times 10^{100}$
sinh x, cosh x	$0 \leqq \lvert x \rvert \leqq 230.2585092$

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version : 10/05/31

tanh x	$0 \leq \lvert x \rvert < 1 \times 10^{100}$
$\sinh^{-1} x$	$0 \leq \lvert x \rvert < 5 \times 10^{99}$
$\cosh^{-1} x$	$1 \leq x < 5 \times 10^{99}$
$\tanh^{-1} x$	$0 \leq \lvert x \rvert < 1$
log x, ln x	$0 < x < 1 \times 10^{100}$
10^x	$-1 \times 10^{100} < x < 100$
e^x	$-1 \times 10^{100} < x \leq 230.2585092$
$\sqrt{x}$	$0 \leq x < 1 \times 10^{100}$
x^2	$\lvert x \rvert < 1 \times 10^{50}$
x^3	$\lvert x \rvert \leq 2.15443469003 \times 10^{33}$
x^{-1}	$\lvert x \rvert < 1 \times 10^{100}$, $x \neq 0$
$\sqrt[3]{x}$	$\lvert x \rvert < 1 \times 10^{100}$
X !	$0 \leq x \leq 69$ (x is an integer)
nPr	$0 \leq r \leq n$, $0 \leq n < 1 \times 10^{10}$ (n,r are integers) $1 \leq \{n!/(n-r)!\} < 1 \times 10^{100}$
nCr	$0 \leq r \leq n$, $0 \leq n < 1 \times 10^{10}$ (n,r are integers) $1 \leq n!/r! < 1 \times 10^{100}$ or $1 \leq \{n!/(n-r)!\} < 1 \times 10^{100}$
R→P	$\lvert x \rvert$, $\lvert y \rvert < 1 \times 10^{100}$ $\sqrt{x^2 + y^2} < 1 \times 10^{100}$
P→R	$0 \leq r < 1 \times 10^{100}$ θ : same as sin x
DMS	$\lvert D \rvert$, M, S $< 1 \times 10^{100}$, $0 \leq$ M, S
◄DMS	$\lvert x \rvert < 1 \times 10^{100}$ Decimal ↔ Sexagesimal Conversions $0^{\circ}0'0'' \leq \lvert x \rvert \leq 9999999^{\circ}59'59''$
x^y	$x > 0$: $-1 \times 10^{100} < y \log x < 100$ $x = 0$: $y > 0$ $x < 0$: $y = n$, $m/(2n+1)$ (m, n are integers) but $-1 \times 10^{100} < y \log \lvert x \rvert < 100$
$\sqrt[x]{y}$	$y > 0$: $x \neq 0$, $-1 \times 10^{100} < \frac{1}{x} \log y < 100$ $y = 0$: $x > 0$ $y < 0$: $x = 2n+1$, $(2n+1)/m$ ($m \neq 0$, m, n are integers) but $-1 \times 10^{100} < \frac{1}{x} \log \lvert y \rvert < 100$
PGCD	$-1 \times 10^{10} < x, y < 1 \times 10^{10}$ (x, y are integers)
PPCM	$0 \leq x, y < 1 \times 10^{10}$ (x, y are integers)
SIMP	$1 \leq n \leq 9999$ (n is an integer)
$A\,{}^{b}/_{c}$	Total of integer, numerator and denominator must be within 10 digits (includes division marks)

STAT	**1–VAR :** a. n ≦ 80 lines (when **FREQ** column is OFF) b. n ≦ 40 lines (when **FREQ** column is ON) **2–VAR :** a. n ≦ 40 lines (when **FREQ** column is OFF) b. n ≦ 26 lines (when **FREQ** column is ON)

■ Error conditions

Error message will appear on the display and further calculation becomes impossible when any of the following conditions occur.

Indicator	Meanings
Math ERROR	(1) You attempted to divide by 0 (2) When allowable input range of function calculations exceeds the range specified (3) When result of function calculations exceeds the range specified (4) When specifying an argument to a function outside the valid range
Syntax ERROR	(1) Input errors are made, ex. improper syntax (2) When improper arguments are used in commands or functions
Stack ERROR	When a calculation expression exceeds the capacity of the numeric stack or command stack, ex. When the [( ] key is used more than 25 levels in a single expression in linear mode
Argument ERROR	A function does not have the correct number of arguments.
Non simplifiable	When the value you specify is invalid as divisor for simplification
Insufficient MEM Error	When there is insufficient memory to store data or perform your calculation

To release the above errors, please press [◀] [▶] to correct your error, or press [AC] key to cancel your calculation, or simply press [ON] key to reinitialize the calculator.

Basic Calculations

Use COMP ([MODE] 1 (COMP)) mode for basic calculations.

■ Arithmetic calculation

Arithmetic operations are performed by pressing the keys in the same sequence as in the expression. See Example 7.

For negative values, press [(–)] before entering the value.; You can enter a number in mantissa and exponent form by [$\times 10^{x}$] key. See Example 8.

Results equal to or greater than 10^{10} or results less than 10^{-9} are displayed in exponential form. See Example 9.

■ Parentheses calculations

Operations inside parentheses are always executed first. The calculator Math mode can use up to 24 levels and Linear mode can use up to 25 levels of consecutive parentheses in a single calculation.

Closed parentheses occurring immediately after operation of the [ )] key may be omitted, no matter how many are required. See Example 10.

(Note) : A multiplication sign " x " occurring immediately before an open parenthesis can be omitted.

The correct result cannot be derived by entering [( ] 2 [+] 3 [ )] [$x10^x$] 2. Be sure to enter [x] between the [ )] and [$x10^x$] in Example 11.

■ Percentage calculation

[2nd] [%] divides the number in the display by 100. You can use this key sequence to calculate percentages, add-ons, discounts, and percentage ratios. See Example 12~13.

■ Display notations

The calculator has the following display notations for the display value. See Example 14.

Fixed Decimal Point Notation

To specify the number of decimal places, press [2nd] [SET UP] [6] and then a value indicating the number of places (0~9). Values are displayed rounded off to the place specified.

Scientific Notation

Scientific notation expresses numbers with one digit to the left of the decimal and the appropriate power of 10.

To select scientific notation, press [2nd] [SET UP] [7], and then a value (0~9) to specify the number of decimal digits. Values are displayed rounded off to the place specified.

Norm Notation

Press [2nd] [SET UP] [8] and then select Norm1 (the default) or Norm2 to determine the range to display the result in non-exponential format (within the range) or in exponential format (out of the range).

Norm1: $|x| < 10^{-2}$, $|x| \geqq 10^{10}$

Norm2: $|x| < 10^{-9}$, $|x| \geqq 10^{10}$

Engineering Notation

Pressing [ENG] or [2nd] [◄ENG] will cause the exponent display for the number being displayed to change in multiples of 3.

■ Answer Function

Answer function stores the most recently calculated result. It is retained even after the power is turned off. Once a numeric value or numeric expression is entered and [M+], [2nd] [M–], [RCL], [2nd] [STO] or [=] is pressed, the result is stored by this function. See Example 15.

(Note) : Even if execution of a calculation results in an error, however, Answer memory retains its current value.

Scientific Function Calculations

Use COMP ([MODE] 1 (COMP)) mode for scientific function calculations.

■ Logarithmic and Exponential functions

The calculator can calculate common and natural logarithms, and exponentiation using [log], [ln], [$\log_a b$], [2nd] [10^x], and [2nd] [e^x]. See Example 16~17.

■ Fraction calculation

Fraction value display is as follows:

	Improper Fraction	Mixed Fraction
Math format:	$\frac{12}{5}$	$56\frac{5}{12}$
Linear format:	12 ⌟ 5	56 ⌟ 5 ⌟ 12

(Note) : Values are automatically displayed in decimal format whenever the total number of digits of a fractional value (integer + numerator + denominator + separator marks) exceeds 10.

In Linear mode, to enter a mixed number, enter the integer part, press [d/e], enter the numerator, press [d/e], and enter the denominator ; To enter an improper fraction, enter the numerator, press [d/e], and enter the denominator. See Example 18.

During a fraction calculation, if the figure is reducible, a figure is reduced to the lowest terms after pressing the [=] key. The initial default for a fraction result is improper fraction. By pressing [2nd] [A $b/c \leftrightarrow d/e$], the displayed value will be converted to the mixed fraction and vice versa. To convert between a decimal and fractional result, press [F$\leftrightarrow$D]. See Example 19.

Calculations containing both fractions and decimals are calculated in decimal format. See Example 20.

The initial default of the calculator is automatic simplification of fraction produced by fraction calculations. When the fraction simplification is set to manual, you can let the calculator automatically selects the smallest possible divisor for simplification or you can specify a divisor. See Example 21~22.

(Note) : 1. "⇩" next to the resulting fraction signifies that the fraction is not yet in simplest form.

2. "Fraction irreduc" appears that further simplification is impossible.

■ Angle unit conversions

The angle unit (**Deg**, **Rad**, **Grad**) is set by pressing [2nd] [SET UP] from Setup screen and results are displayed according to your setting.

The relation among the three angle units is:

$$180\ ^\circ = \pi \text{ rad} = 200 \text{ grad}$$

Angle unit conversions (See Example 23.):

1) Change the default setting (**Deg**) to the unit you want to convert to.
2) Enter the value of the unit to convert.
3) Press [2nd] [DRG▶] to display the menu. The units you can select are ° (**degrees**), r (**radians**), g (**gradians**).
4) Select the unit you are converting from, and press [=].

■ Sexagesimal ↔ Decimal transformation

You can use sexagesimal figure (degree, minute and second) to perform calculations and convert values between sexagesimal and decimal notation by using [DMS] or [2nd] [◀DMS] keys. See Example 24~25.

Sexagesimal figure value display is as follows:

125 □ 45 ' 30 ''	Represent 125 degrees (D), 45 minutes(M), 30 seconds(S)

■ Trigonometric / Inverse-Tri. functions

The calculator provides standard trigonometric functions and inverse trigonometric functions: sin, cos, tan, $\sin^{-1}$, $\cos^{-1}$ and $\tan^{-1}$. See Example 26~28.

(Note) : When using those keys, make sure the calculator is set for the angle unit you want.

■ Hyperbolic / Inverse-Hyp. functions

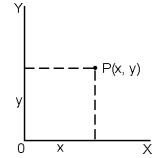
The calculator uses [HYP] to calculate the hyperbolic functions and inverse-hyperbolic functions: sinh, cosh, tanh, $\sinh^{-1}$, $\cosh^{-1}$ and $\tanh^{-1}$. Press [HYP] to display the menu and then select the corresponding number to perform the function item. See Example 29~30.

(Note) : When using those keys, make sure the calculator is set for the angle unit you want.

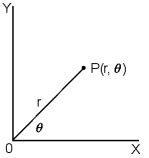
File name : SR100DCollege_English_text_0531_final.doc
version : 10/05/31

■ Coordinates transformation

Rectangular Coordinates



Polar Coordinates



$x + y\,i = r(\cos\theta + i\sin\theta)$

(Note) : When using those keys, make sure the calculator is set for the angle unit you want.

The calculator can perform the conversion between rectangular coordinates and polar coordinates by [2nd] [P→R] and [2nd] [R→P]. See Example 31~32.

■ Probability

This calculator provides the following probability functions (See Example 33~36.):

[nPr] Calculates the number of possible permutations of n item taken r at a time.

[nCr] Calculates the number of possible combinations of n items taken r at a time.

[x !] Calculates the factorial of a specified integer n , where n ≦69.

[RANDM] Generates a random real number between 0.000 and 0.999.

■ Division with Quotient and Remainder

You can use [2nd] [÷R] to get the quotient and remainder of division operations. Only the quotient is stored to Answer memory. (See Example 37)

(Note) : If one of the following conditions are present when performing an operation with calculation and display of remainder, the calculation will be treated as a normal division (without calculation or display of remainder)

A. When the dividend when the divisor is a great value.
Example: 20000000000 [2nd] [÷R] 17 [=]
➔ is calculated as: 200000000000 ÷ 17

B. When the quotient is not a positive value or the remainder is not an entire positive or a positive fraction
Example: [(-)] 5 [2nd] [÷R] 2 [=]
➔ is calculated as: -5 ÷ 2

■ Using CALC

CALC function lets you temporarily store a mathematical expression that contain variables, which you can then recall and execute in the COMP Mode. The following describes the types of expressions you can save with CALC. See Example 38.

1) Expressions: 2X + 3Y, 2AX + 3BY + C
2) Multi-statements: X + Y : X (X + Y)
3) Equalities with a single variable on the left and an expression including variables on the right: A = B + C, Y = X2 + X + 3

   (Use [ALPHA] [=] to input the equals sign of the equality.)

■ Other functions ($\sqrt{}$, $\sqrt[3]{}$, $\sqrt[x]{}$, x^{-1}, x^2, x^3, x^y , Abs, RND, PPCM, PGCD, ENT, ENTEX)

The calculator also provides reciprocal ([x^{-1}]), square root ([$\sqrt{}$]), cubic root ([2nd] [$\sqrt[3]{}$]), universal root ([2nd] [$\sqrt[x]{}$]), square ([x^2]), cubic ([x^3]), and exponentiation ([x^y]) functions. See Example 39~47.

Abs Generates the absolute value of a real number

RND Generates the rounding value of a given number

PPCM Calculates the smaller mutual multiple of two positive integers.

PGCD Calculates the bigger mutual divisor of two positive integers.

ENT Input a value to extract the integer part.

ENTEX Input a value to obtain the largest integer that is not greater than the value.

■ Multi-statement Function

A Multi-statement is a number of individual statements grouped together by display result commands (:) for sequential execution. When execution reaches the end of a statement followed by (:), execution stops and an intermediate result with a " Disp " icon appears on the display. You can resume execution by pressing [=]. " Disp " icon disappears when the last statement is being executed. See Example 48.

Statistical Calculations

Use STAT ([MODE] 2 (STAT)) mode for statistical calculations.

When you enter STAT mode, you are taken to the STAT menu with a choice of eight calculation types as follows:

Single–variable statistics

1: 1–VAR Single-variable statistics

Paired-variable / Regression statistics

2: A+BX Linear Regression Y = A + BX

3: _+CX^2	Quadratic Regression	$Y = A + BX + CX^2$
4: ln X	Logarithmic Regression	$Y = A + B \ln X$
5: e^X	*e* Exponential Regression	$Y = A \cdot e^{BX}$
6: A•B^X	ab Exponential Regression	$Y = A \cdot B^X$
7: A•X^B	Power Regression	$Y = A \cdot X^B$
8: 1/X	Inverse Regression	$Y = A + B / X$

■ To Enter data for statistical analysis

Before entering data, press [2nd] [SET UP] [▼] [3] in sequence to set Frequency column as On or Off. **FREQ** column enables you to enter the number of repeats for each of the same value occurred. See Example 49.

1. From the STAT menu, choose a calculation type. There will be two Data Editor formats (**1–VAR** or **2–VAR / regression Data)** depending on the type you select.
2. Enter an x - value and press [=].
3. Enter the frequency (**FREQ**) of the x-value (in **1–VAR** mode) or the corresponding y-value (in **2–VAR** mode) and press [=].
4. To enter more data, repeat from step 3.
5. To exit Data Editor mode to Result displaying mode, press [AC] and then [2nd] [STATVAR] to display STATVAR menu. (See table below)

■ To analyze data you have entered

Once you have entered your data, you can use the functions in STATVAR menu by pressing [2nd] [STATVAR]:

STATVAR Menu	Meaning
1: Type	Statistical calculation type menu, see the 8 types as previously mentioned in STAT menu
2: Data	The data editor screen
3: Edit	The editing commands sub-menu: [Ins], [Del-A]
4: Sum	The summation sub-menu
5: Var	The statistical variable sub-menu
6: MinMax	The maximum/minimum sub-menu
7: Reg (2-VAR)	The regression sub-menu

Use options 1~3 to view or change data. Use options 4~7 to select the desired variable to analyze your data.

The values of the statistical variables depend on the data you input. You can recall them by the key operations shown in the below table.

Single–variable statistics calculations

Variables	Keys	Meaning
$\sum x^2$	[4: Sum] [1]	Sum of all x^2 values
$\sum x$	[4: Sum] [2]	Sum of all x values

n	[5: Var] [1]	Number of the x values entered
$\bar{x}$	[5: Var] [2]	Mean of the x values
$x\sigma n$	[5: Var] [3]	Population standard deviation of x values
$x\sigma n-1$	[5: Var] [4]	Sample standard deviation of x values
minX	[6: MinMax] [1]	Minimum of x-value
maxX	[6: MinMax] [2]	Maximum of x-value

Paired-variable statistics / Regression calculations

Variables	Keys	Meaning
Σx Σy	[4: Sum] [2] [4: Sum] [4]	Sum of all x values or y values
Σx^2 Σy^2	[4: Sum] [1] [4: Sum] [3]	Sum of all x^2 values or y^2 values
Σx^3 Σx^4	[4: Sum] [6] [4: Sum] [8]	Sum of all x^3 values or x^4 values
Σxy	[4: Sum] [5]	Sum of (x • y) for all x-y pairs
$\Sigma x^2 y$	[4: Sum] [7]	Sum of (x^2 • y) for all x-y pairs
n	[5: Var] [1]	Number of x-y pairs entered
$\bar{x}$ $\bar{y}$	[5: Var] [2] [5: Var] [5]	Mean of the x values or y values
$x\sigma n-1$ $y\sigma n-1$	[5: Var] [4] [5: Var] [7]	Sample standard deviation of x values or y values
$x\sigma n$ $y\sigma n$	[5: Var] [3] [5: Var] [6]	Population standard deviation of x values or y values
minX	[6: MinMax] [1]	Minimum of x-value
maxX	[6: MinMax] [2]	Maximum of x-value
minY	[6: MinMax] [3]	Minimum of y-value
maxY	[6: MinMax] [4]	Maximum of y-value
A	[7: Reg] [1]	Regression coefficient constant term A
B	[7: Reg] [2]	Regression coefficient B

For non-Quadratic Regression :

r	[7: Reg] [3]	Correlation coefficient r
$\hat{x}$	[7: Reg] [4]	Estimated value of x
$\hat{y}$	[7: Reg] [5]	Estimated value of y

For Quadratic Regression (_+CX^2) only :

C	[7: Reg] [3]	Quadratic coefficient C of the regression coefficients
$\hat{x}_1$	[7: Reg] [4]	Estimated value of x1
$\hat{x}_2$	[7: Reg] [5]	Estimated value of x2
$\hat{y}$	[7: Reg] [6]	Estimated value of y

You also can add a new data anytime. The unit automatically recalculates statistics each time you press [=] and enter a new data value.

■ To view or change data

1. Press [2nd] [STATVAR] [2] to enter Editor Screen.
2. Press [▼] or [▲] to scroll through the data you have entered.
3. To ***change*** an entry, display it and enter the new data. The new data you enter overwrites the old entry. Press [=] to save the change.
4. To ***delete*** an entry, position the cursor on the line you want to delete, press [DEL].
5. To ***insert*** an entry, position the cursor on the line above where you want to insert, press [2nd] [STATVAR] [3] and then select [1] (Ins) to create a new blank entry, fill the new data in the blank and press [=].
6. To ***delete all*** entries, press [2nd] [STATVAR] [3] and then select [2] (Del-A) to clear all data on the Editor Screen.

(Note) : Statistical data and results are retained when the calculator is turned off, but are cleared when you change calculation types, FREQ setting or clear data by selecting Del-A command from STATVAR menu.

Equation Calculations

Use EQN ([MODE] 3 (EQN)) mode for simultaneous linear equations calculation.

An equation type menu appears when you press [MODE] [3](EQN) and enter the EQN mode. (See Example 50~51)

EQN Menu	Meaning	Equation
1: anX+bnY=cn	Simultaneous linear equations with two unknowns	$\begin{cases} a_1X + b_1Y = c_1 \\ a_2X + b_2Y = c_2 \end{cases}$
2: anX+bnY+cnZ=dn	Simultaneous linear equations with three unknowns	$\begin{cases} a_1X + b_1Y + c_1Z = d_1 \\ a_2X + b_2Y + c_2Z = d_2 \\ a_3X + b_3Y + c_3Z = d_3 \end{cases}$

■ To solve simultaneous linear equations

You can use the following procedure in the EQN mode to solve simultaneous linear equations with two or three unknowns.

1. Press [MODE] [3] [1] or [MODE] [3] [2].
2. Enter the value for each coefficient (a_1, etc.) and press [=].
   - To change a coefficient value you already have input, move the cursor to the appropriate cell, input the new value, and then press [=].
   - To clear all the coefficients, press [AC].

   (Note) : After inputting data, press [=]. The registers the value and displays up to six of its digits in the currently selected cell.
3. When all coefficients have been entered, press [=] to solve the equation.
4. Each press of [=] displays the next solution.
5. Pressing [=] while the final solution is displayed returns to the coefficient entry display.

   (Note) : Pressing [AC] while a solutions is displayed will return to the coefficient entry display.

Function Table

Use TABLE ([MODE] 4 (TABLE)) mode for generation of a function table.

TABLE mode lets you define a function and express it in a tabular form. To set up a function table, you need to: (See Example 52.)

1. Press [MODE] [4] (TABLE)
2. Enter a function, and press [=]
3. Input the Start, End, and Step value of X, and press [=]
4. After Step 3, a table of values that consists of each input, X, and its corresponding output, f(X), is generated.

   (Note) : 1. Only the variable X is available to be used in a function.

   2. The Start, End, and Step value you specify should produce a table not exceed a maximum of 30 X-values.

Using Verify

Use VERIF ([MODE] 5 (VERIF)) mode for compare of two values. (See Example 53)

You can enter the following expressions for check mode VERIFY.

1) Equalities or inequalities involving a relational operator
   $4 = \sqrt{16}$; $4 \neq 3$; $\pi > 3$; $1+2 \leqq 5$; $(3x6) < (2+6)x2$; etc.
2) Equalities or inequalities involving multiple relational operator
   $1 \leqq 1 < 1+1$; $3 < \pi < 4$; $2^2 = 2+2 = 4$; $2+2 = 4 < 6$; $2+3 = 5 \neq 2+5 = 8$; etc.

Pressing the [2nd][VERIFY] key displays a menu of functions. Press the number key that corresponds to the function you want to input.

KEY IN	DISPLAY	
[2nd]	1: =	2: ≠
[VERIFY]	3: >	4: <
	5: ≧	6: ≦

Proportionality Calculations

Use PROP ([MODE] 6 (PROP)) mode for proportionality calculation.

The PROP mode lets you determine the value of X in the proportionality expression a:b=X:d (or a:b=c:X) when the value of a, b, c and d are known. (See Example 54)

■ To solve the value of X

1. Press [MODE] [6] [1] or [MODE] [6] [2].
2. Enter the value for each of required value (a, b, c, d) and press [=]. To clear all the coefficients, press [AC].
3. When all coefficients have been entered, press [=] to solve the X.
4. Pressing [=] or [AC] will return to the coefficient entry display.

(Note) : 1. After inputting data, press [=]. The registers the value and displays up to six of its digits in the currently selected cell.

2. you cannot transform values to engineering notation while an equation solution is displayed.

3. A Math ERROR will occur if you perform a calculation while 0 is input for a coefficient.

Example

Example 1

➢ 【Math】: $1\frac{2}{3} + \frac{5}{6} = \frac{5}{2}$

[2nd] [A b/c] 1 [▶] 2 [▼] 3 [▶] [+] [d/e] 5 [▼] 6 [▶] [=]	Math ▲ $1\frac{2}{3} + \frac{5}{6}$ $\frac{5}{2}$

Example 2

➢ 【Math】: $(1+\sqrt{2})^2 \times 2 = 6 + 4\sqrt{2}$

[( ] 1 [+] [√] 2 [▶] [ )] [x^2] [x] 2 [=]	Math ▲ $(1+\sqrt{2})^2 \times 2$ $6+4\sqrt{2}$

Example 3

➢ 【Math】:14÷0 x 2.3 mistakenly input instead of 14÷10 x 2.3

14 [÷] 0 [x] 2.3 [=]	Math Math ERROR [AC] :Cancel [◀] [▶] :Goto
[◀] [◀] 1 [=]	Math ▲ 14÷10x2.3 $\frac{161}{50}$

Example 4

➢ (1) 【Math】: Change 123 x 456 as 12 x 457

123 [x] 456 [=]	Math ▲ 123x456 56088
[▶] [▶] [▶] [▶] [DEL]	Math ▲ 12▌x456

File name :
SR100DCollege_E_Example_110302_HDBR100DE04.doc
version : 10/11/23

[▶] [▶] [▶] [▶] [DEL] 7	Math ▲ 1 2 x 4 5 7
[=]	Math ▲ 1 2 x 4 5 7 5 4 8 4

Example 5

➢ (1) 【Math】: Put the value 30 into variable A

30 [2nd] [STO] [A]	Math ▲ 3 0 → A 3 0

➢ (2)【Math】: Multiply 5 to variable A, then put the result into variable B

5 [x] [RCL] [A] [=]	Math ▲ 5 x A 1 5 0
[2nd] [STO] [B]	Math ▲ A n s → B 1 5 0

➢ (3) 【Math】: Clear the value of variable B

0 [2nd] [STO] [B]	Math ▲ 0 → B 0
[RCL] [B]	Math ▲ B 0

Example 6

➢ 【Math】: [(3 x 5) + (56 ÷ 7) + (74 – 8 x 7)] = 41

0 [2nd] [STO] [M]	Math ▲ 0 → M 0
3 [x] 5 [M+] 56 [÷] 7 [M+] 74 [–] 8 [x] 7 [M+]	M Math ▲ 7 4 – 8 x 7 M + 1 8
[RCL] [M]	M Math ▲ M 4 1

File name :
SR100DCollege_E_Example_110302_HDBR100DE04.doc
version : 10/11/23

0 [2nd] [STO] [M]	Math ▲ 0→M 0

Example 7

➢ 【Math】: 7 + 5 x 4 = 27

7 [+] 5 [x] 4 [=]	Math ▲ 7 + 5 x 4 27

Example 8

➢ 【Math】: 2.75 x 10^{-5} = $\frac{11}{400000}$

2.75 [x10^x] [(–)] 5 [=]	Math ▲ 2.75x10-5 $\frac{11}{400000}$

➢ 【Line】: 2.75 x 10^{-5} = 2.75 x 10^{-5}

[2nd] [SET UP] [2] (LineIO) 2.75 [x10^x] [(–)] 5 [=]	▲ 2.75x10-5 2.75×10^{-5}
[2nd] [SET UP] [8] [2] (NORM 2)	▲ 2.75x10-5 0.0000275

Example 9

➢ 【Line】: 10000 x 10000 x 100 = 10,000,000,000 = 1 x 10^{10}

10000 [x] 10000 [x] 100 [=]	▲ 10000x10000x100 1×10^{10}

Example 10

➢ 【Math】: 2 x { 7 + 6 x (5 + 4) } = 122

[2nd] [SET UP] [1] (MthIO) 2 [( ] 7 [+] 6 [( ] 5 [+] 4 [=]	Math ▲ 2(7+6(5+4 122

File name :
SR100DCollege_E_Example_110302_HDBR100DE04.doc
version : 10/11/23

Example 11

➢ 【Math】: (2 + 3) x 10^{2} = 500

[( )] 2 [+] 3 [ )] [x] [$x10^{x}$] 2 [=]	Math ▲ (2 + 3) $\times 10^{x}$ 2 500

Example 12

➢ 【Math】: 120 x 30 % = 36

120 [x] 30 [2nd] [%] [=]	Math ▲ 120 x 30 % 36

Example 13

➢ 【Math】: 88 ÷ 55 % = 160

88 [÷] 55 [2nd] [%] [=]	Math ▲ 88 ÷ 55 % 160

Example 14

➢ 【Line】: 6 ÷ 7 = 0.8571428571…

[2nd] [SET UP] [2] (LineIO) 6 [÷] 7 [=]	▲ 6 ÷ 7 0.857142857 1
[2nd] [SET UP] [6] [4] (Fix 4)	FIX ▲ 6 ÷ 7 0.857 1
[2nd] [SET UP] [6] [2] (Fix 2)	FIX ▲ 6 ÷ 7 0.86
[2nd] [SET UP] [7] [5] (Sci 5)	SCI ▲ 6 ÷ 7 8.57143×10^{-1}
[2nd] [SET UP] [8] [2] (Norm 2)	▲ 6 ÷ 7 0.857142857 1

File name :
SR100DCollege_E_Example_110302_HDBR100DE04.doc
version : 10/11/23

[ENG]	D ▲ 6 ÷ 7 857.142857 1 x 10^{-3}
[2nd] [◄ENG] [2nd] [◄ENG]	D ▲ 6 ÷ 7 0.000857142 x 10^{3}
[F⇔D]	D ▲ 6 ÷ 7 6 ⌟ 7

Example 15

➢ 【Math】: 123 + 456 = 579 → 789 – 579 = 210

[2nd] [SET UP] [1] (MthIO) 123 [+] 456 [=]	Math D ▲ 123 + 456 579
789 [–] [ANS] [=]	Math D ▲ 789 – Ans 210

Example 16

➢ 【Math】: ln 7 + log 100 = 3.945910149

[ln] 7 [ )] [+] [log] 100 [=]	Math D ▲ ln (7) + log (100 3.945910149

Example 17

➢ 【Math】: $10^{2} + e^{-5}$ = 100.0067379

[2nd] [10^{X}] 2 [▶] [+] [2nd] [e^{X}] [(–)] 5 [=]	Math D ▲ $10^{2} + e^{-5}$ 100.0067379

Example 18

➢ 【Line】: $7\frac{2}{3} + 14\frac{5}{7} = 22\frac{8}{21} = \frac{470}{21}$

[2nd] [SET UP] [2] (LineIO) 7 [$^{d}/_{e}$] 2 [d/e] 3 [+] 14 [d/e] 5 [$^{d}/_{e}$] 7 [=]	D ▲ 7 ⌟ 2 ⌟ 3 + 14 ⌟ 5 ⌟ 7 470 ⌟ 21

File name :
SR100DCollege_E_Example_110302_HDBR100DE04.doc
version : 10/11/23

Example 19

➢ 【Line】: $4\frac{2}{4}=\frac{9}{2}=4\frac{1}{2}=4.5$

4 [d/e] 2 [d/e] 4 [=]	D ▲ 4 ⌟2 ⌟4 9 ⌟2
[2nd] [A b/c ↔ d/e]	D ▲ 4 ⌟2 ⌟4 4 ⌟1 ⌟2
[F↔D]	D ▲ 4 ⌟2 ⌟4 4.5
[F↔D]	D ▲ 4 ⌟2 ⌟4 9 ⌟2

Example 20

➢ 【Line】: $8\frac{4}{5}+3.75=12.55$

8 [d/e] 4 [d/e] 5 [+] 3.75 [=]	D ▲ 8 ⌟4 ⌟5 + 3 . 7 5 1 2.5 5

Example 21

➢ 【Line】: $2\frac{9}{27}+1\frac{1}{9}=\frac{93}{27}=\frac{31}{9}$ (F=3)

[2nd] [SET UP] [▼] [4] (SIMP)	S i m p l i f y ? 1 : Auto 2 : Manual
[2](Manual) 2 [d/e] 9 [d/e] 27 [+] 1 [d/e] 1 [d/e] 9 [=]	D ▲ 2 ⌟9 ⌟2 7 + 1 ⌟1 ⌟9 9 3 ⌟2 7 ⇩
[2nd] [SIMP] [=]	D ▲ 9 3 ⌟2 7 ►S i m p F = 3 3 1 ⌟9
[2nd] [SIMP] [=]	F r a c t i o n i r r e d u c

After 2 second	D ▲ 31⌟9►Simp 31⌟9

Example 22

➢ 【Line】: $\frac{128}{326}=\frac{64}{163}$(F=2)

128 [d/e] 326 [2nd] [SIMP] 9 [=]	D Non simplifiable [AC] :Cancel [◄] [►] :Goto
[◄] [DEL] [=]	D ▲ 128⌟326►Simp F= 2 64⌟163

Example 23

➢ 【Line】: 90 deg. = 1.57079632679 rad. = 100 grad.

[2nd] [SET UP]	▼ 3:Deg 4:Rad 5:Gra
[4] (Rad) 90 [2nd] [DRG►]	1:° 2:r 3:g
[1] (°) [=]	R ▲ 90° 1.570796327
[2nd] [SET UP] [5] (Gra) [=]	G ▲ 90° 100

Example 24

➢ 【Line】: 12.755 = 12°45'18"

[2nd] [SET UP] [3] (Deg) 12.755 [=]	D ▲ 12.755 12.755
[DMS]	D ▲ 12.755 12°45'18"

File name :
SR100DCollege_E_Example_110302_HDBR100DE04.doc
version : 10/11/23

Example 25

➢ 【Line】: $2^{\circ}45'10.5''+25'30''=3.17791666667$

2 [DMS] 45 [DMS] 10.5 [DMS] [+] 0 [DMS] 25 [DMS] 30 [DMS] [=]	D ▲ 2□45□10.5□+0□25▷ 3°10'40.5''
[2nd] [◄ DMS]	D ▲ 2□45□10.5□+0□25▷ 3.17791666667

Example 26

➢ 【Math】: sin 30 deg.= $\frac{1}{2}$

[2nd] [SET UP] [1] (MthIO) [sin] 30 [=]	Math D ▲ sin(30 $\frac{1}{2}$

Example 27

➢ 【Math】: 3 cos ($\frac{2}{3}\pi$ rad) = $-\frac{3}{2}$

[2nd] [SET UP] [4] (Rad) 3 [cos] 2 [÷] 3 [x] [2nd] [π] [=]	Math R ▲ 3cos(2÷3xπ $-\frac{3}{2}$

Example 28

➢ 【Math】: 3 $\sin^{-1}$ 0.5 = 90 deg

[2nd] [SET UP] [3] (Deg) 3 [2nd] [$\sin^{-1}$] 0.5 [=]	Math D ▲ 3sin^{-1}(0.5 90

Example 29

➢ 【Line】: cosh 1.5 + 2 = 4.352409615

[2nd] [SET UP] [2] (LineIO) [HYP] [2] (cosh) 1.5 [ )] [+] 2 [=]	D ▲ cosh(1.5)+2 4.352409615

File name :
SR100DCollege_E_Example_110302_HDBR100DE04.doc
version : 10/11/23

Example 30

➢ 【Line】: $\sinh^{-1} 7 = 2.644120761$

[HYP] [4] ($\sinh^{-1}$) 7 [=]	$\sinh^{-1}(7$ 2.644120761

Example 31

➢ 【Line】: If x = 5, y = 30, what are r, θ ? Ans : r = 30.41381265, θ = 80.53767779 °

[2nd] [SET UP] [2] (LineIO) [2nd] [R→P] 5 [2nd] [,] 30 [=]	Pol(5,30 r= 30.41381265 θ= 80.53767779

Example 32

➢ 【Line】: If r = 25, θ = 56 ° what are x , y ? Ans : x = 13.97982259, y = 20.72593931

[AC] [2nd] [P→R] 25 [2nd] [,] 56 [=]	Rec(25,56 X= 13.97982259 Y= 20.72593931

Example 33

➢ 【Math】: $\frac{7!}{[(7-4)]!} = 840$

[2nd] [SET UP] [1] (MthIO) 7 [2nd] [nPr] 4 [=]	Math 7P4 840

Example 34

➢ 【Math】: $\frac{7!}{4![(7-4)]!} = 35$

7 [2nd] [nCr] 4 [=]	Math 7C4 35

File name :
SR100DCollege_E_Example_110302_HDBR100DE04.doc
version : 10/11/23

Example 35

➢ 【Math】: 5 ! = 120

5 [2nd] [x !] [=]	Math ▲ 5 ! 1 2 0

Example 36

➢ 【Line】: Generates a random number between 0.000 ~ 0.999

[2nd] [SET UP] [2] (LineIO) [2nd] [RANDM] [=]	▲ R a n # 0.4 4 9

Example 37

➢ 【Line】: 52 ÷R 6 + 10 = 18

52 [2nd] [÷R] 6 [=]	▲ 5 2 ÷ R 6 Q = 8 R = 4
[+] 10 [=]	▲ A n s + 1 0 1 8

Example 38

➢ 【Line】: Calculate the result for $Y = X^2 + 15X + 25$ when X = 7 (Y = 179) and when X = 8 (Y = 209)

[ALPHA] [Y] [ALPHA] [=] [ALPHA] [X] [x^2] [+] 15[ALPHA] [X] [+] 25 [2nd][CALC]	▲ X ? 0
7 [=]	▲ Y = X ² + 1 5 X + 2 5 1 7 9
[=]	▲ X ? **7**
8 [=]	▲ Y = X ² + 1 5 X + 2 5 2 0 9

File name :
SR100DCollege_E_Example_110302_HDBR100DE04.doc
version : 10/11/23

Example 39

➢ 【Line】: $\frac{1}{1.25} = 0.8$

1.25 [x^{-1}] [=]	D ▲ 1 . 2 5 $^{-1}$ 0.8

Example 40

➢ 【Line】: $2^{2} + \sqrt{4+21} + \sqrt[3]{125} + 5^{3} = 139$

2 [x^{2}] [+] [$\sqrt{}$] 4 [+] 21 [ )] [+] [2nd] [$\sqrt[3]{}$] 125 [ )] [+] 5 [x^{3}] [=]	D ▲ 2 ^{2} + $\sqrt{}$ (4 + 2 1) + $\sqrt[3]{}$ (1 ▷ 1 3 9

Example 41

➢ 【Line】: $7^{5} + \sqrt[4]{625} = 16812$

7 [x^{y}] 5 [ )] [+] 4 [2nd] [$\sqrt[x]{}$] 625 [=]	D ▲ 7 ^ (5) + 4 $^{x}\sqrt{}$ (6 2 5 1 6 8 1 2

Example 42

➢ 【Line】: $|2.5 - 9.8| = 7.3$

[Abs] 2.5 [–] 9.8 [ )] [=]	D ▲ A b s (2 . 5 - 9 . 8) 7.3

Example 43

➢ 【Line】: 9 ÷ 7 = 1.285714286, RND (9 ÷ 7) = 1.286

[2nd] [SET UP]	. . . . . ▼ 5 : G r a 6 : F i x 7 : S c i 8 : N o r m
[6] [3] (Fix 3) [2nd] [RND] 9 [÷] 7 [=]	D FIX ▲ R n d (9 ÷ 7 1.2 8 6
[2nd] [CLR] [1] (Clear Setup) [=] [AC]	Math D ▌

Example 44

➢ 【Math】: PPCM (12, 56) = 168

[2nd] [PPCM] 12 [2nd] [,] 56 [=]	Math PPCM(12,56 168

Example 45

➢ 【Math】: PGCD (12 , 56) = 4

[2nd] [PGCD] 12 [2nd] [,] 56 [=]	Math PGCD(12,56 4

Example 46

➢ 【Math】: ENT (2.53) = 2

[2nd] [ENT] 2.53 [=]	Math Ent(2.53 2

Example 47

➢ 【Math】: ENTEX (-12.48) = -13

[2nd] [ENTEX] [(-)]12.48 [=]	Math EntEx(-12.48 -13

Example 48

➢ 【Math】: Use Multi-statement function to perform the two statements below: (B = 15)

$$\begin{cases} B \times 13 = 195 \\ 180 \div B = 12 \end{cases}$$

[2nd] [SET UP] [1] (MthIO) 15 [2nd] [STO] [B]	Math 15→B 15
[AC] [ALPHA] [B] [x] 13 [ALPHA] [:] 180 [÷] [ALPHA] [B]	Math Bx13:180÷B

File name :
SR100DCollege_E_Example_110302_HDBR100DE04.doc
version : 10/11/23

[=]	Math ▲ DISP B x 1 3 1 9 5
[=]	Math ▲ 1 8 0 ÷ B 1 2

Example 49

➢ Enter X and Y for the following data using linear regression (A+BX), then find out n= 8, $\bar{x}$= 2.875, $\bar{y}$= 6.875, xσn = 1.053268722, yσn-1= 1.125991626, maxX = 4. Σx^2= 75, and A=4 and estimate $\hat{x}$ = ? for y = -3 and $\hat{y}$ = ? for x = 2

X	1	2	3	4
Y	5	6	7	8
FREQ.	1	2	2	3

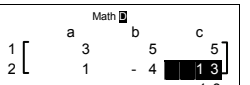
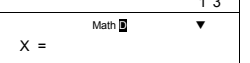
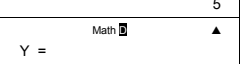
[ON] [2nd] [SET UP] [▼] [3] (STAT)	F r e q u e n c y ? 1 : O N 2 : O F F
[1] (ON)	Math ▌
[MODE] [2] (STAT)	1: 1 - V A R 2: A + B X 3: - + C X ^{2} 4: l n X 5: *e* ^ X 6: A• B ^ X 7: A• X ^ B 8: 1/ X
[2] (A+BX) 1 [=] 2 [=] 3 [=] 4 [=] [▼] [▶] 5 [=] 6 [=] 7 [=] 8 [=] [▼] [▶] 1 [=] 2 [=] 2 [=] 3 [=]	STAT X Y FREQ 3 3 7 2 4 4 8 3 5
[AC]	STAT ▌ 0
[2nd] [STATVAR] [5] [1] [=]	STAT n 8

[2nd] [STATVAR] [5] [2] [=]	STAT $\bar{x}$ 2.875
[2nd] [STATVAR] [5] [5] [=]	STAT $\bar{y}$ 6.875
[2nd] [STATVAR] [5] [3] [=]	STAT $x\ \sigma n$ 1.053268722
[2nd] [STATVAR] [5] [7] [=]	STAT $y\ \sigma n-1$ 1.125991626
[2nd] [STATVAR] [6] [2] [=]	STAT max X 4
[2nd] [STATVAR] [4] [1] [=]	STAT $\sum x^2$ 75
[2nd] [STATVAR] [7] [1] [=]	STAT A 4
[(-)] [3] [2nd] [STATVAR] [7] [4] [=]	STAT $-3\hat{x}$ -7
[2] [2nd] [STATVAR] [7] [5] [=]	STAT $2\hat{y}$ 6

Example 50

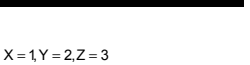
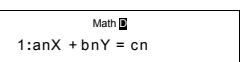
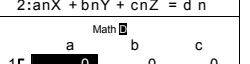
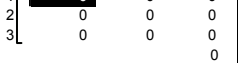
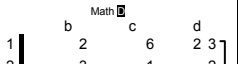
➢ 【Math】: $\begin{cases} 3X+5Y=5 \\ X-4Y=13 \end{cases} \Rightarrow X=5, Y=-2$

[MODE] [3] (EQN)	Math 1:anX + bnY = cn 2:anX + bnY + cnZ = d n
1 (anX+bnY=cn)	Math a b c 1 [0 0 0 2 [0 0 0] 0

3 [=] 5 [=] 5 [=] 1 [=] [(-)] 4 [=] 13 [=]	
[=]	
[=]	

Example 51

➢ 【Math】: $\begin{cases} X+2Y+6Z=23 \\ 5X-3Y+Z=2 \\ 2X+7Y-Z=13 \end{cases} \Rightarrow X=1, Y=2, Z=3$

[MODE] [3] (EQN)	
2 (anX+bnY+cnZ=dn)	
1 [=] 2 [=] 6 [=] 23 [=] 5 [=] [(-)] 3 [=] 1 [=] 2 [=] 2 [=] 7 [=] [(-)] 1 [=] 13 [=]	
[=]	
[=]	
[=]	

File name :
SR100DCollege_E_Example_110302_HDBR100DE04.doc
version : 10/11/23

Example 52

[MODE] [4] (TABLE)	Math f(X) = ▌
2 [ALPHA] [X] [X^2] [+] [ALPHA] [X] [+] 1	Math f(X) = 2 X ^{2} + X + 1▌
[=]	Math S t a r t ? 1
5 [=]	Math E n d ? 5
20 [=]	Math S t e p ? 1
3 [=]	Math X F(X) 1 5 5 6 2 8 1 3 7 3 1 1 2 5 4 5

Example 53

➢ 【Math】: $5^2 = \sqrt{625} > 13$

[MODE] [5] (VERIF)	Math ▌ T R U E / F A L S E
5 [X^2] [2nd] [VERFIY]	1 : = 2 : ≠ 3 : > 4 : < 5 : ≥ 6 : ≤
1 (=)	Math 5 ^{2} = ▌
[√] 625 [►] [2nd] [VERFIY] 3 (>) 13 [=]	Math ▲ 5 ^{2} = $\sqrt{625}$ > 1 3 T R U E

Example 54

➢ 【Line】: 1 in = 2.54 cm, get 10 in = 25.4 cm

[2nd] [SET UP] 2 (LineIO) [MODE] [6] (PROP)	1 : a / b = X / d 2 : a / b = c / X
2 (a/b=c/X)	a b c [0 0 0] a / b = c / X 0
1 [=] 2.54 [=] 10 [=]	a b c [1 2.5 4 1 0] a / b = c / X 1 0
[=]	X = 2 5. 4

WEEE MARK

En If you want to dispose this product, do not mix with general household waste. There is a separate collection systems for used electronics products in accordance with legislation under the WEEE Directive (Directive 2002/96/EC) and is effective only within European Union.

Ge Wenn Sie dieses Produkt entsorgen wollen, dann tun Sie dies bitte nicht zusammen mit dem Haushaltsmüll. Es gibt im Rahmen der WEEE-Direktive innerhalb der Europäischen Union (Direktive 2002/96/EC) gesetzliche Bestimmungen für separate Sammelsysteme für gebrauchte elektronische Geräte und Produkte.

Fr Si vous souhaitez vous débarrasser de cet appareil, ne le mettez pas à la poubelle avec vos ordures ménagères. Il existe un système de récupération distinct pour les vieux appareils électroniques conformément à la législation WEEE sur le recyclage des déchets des équipements électriques et électroniques (Directive 2002/96/EC) qui est uniquement valable dans les pays de l'Union européenne.
Les appareils et les machines électriques et électroniques contiennent souvent des matières dangereuses pour l'homme et l'environnement si vous les utilisez et vous vous en débarrassez de façon inappropriée.

Sp Si desea deshacerse de este producto, no lo mezcle con residuos domésticos de carácter general. Existe un sistema de recogida selectiva de aparatos electrónicos usados, según establece la legislación prevista por la Directiva 2002/96/CE sobre residuos de aparatos eléctricos y electrónicos (RAEE), vigente únicamente en la Unión Europea.

It Se desiderate gettare via questo prodotto, non mescolatelo ai rifiuti generici di casa. Esiste un sistema di raccolta separato per i prodotti elettronici usati in conformità alla legislazione RAEE (Direttiva 2002/96/CE), valida solo all'interno dell'Unione Europea.

Du Deponeer dit product niet bij het gewone huishoudelijk afval wanneer u het wilt verwijderen. Erbestaat ingevolge de WEEE-richtlijn (Richtlijn 2002/ 96/EG) een speciaal wettelijk voorgeschreven verzamelsysteem voor gebruikte elektronische producten, welk alleen geldt binnen de Europese Unie.

Da Hvis du vil skille dig af med dette produkt, må du ikke smide det ud sammen med dit almindelige husholdningsaffald. Der findes et separat indsamlingssystem for udtjente elektroniske produkter i overensstemmelse med lovgivningen under WEEE-direktivet (direktiv 2002/96/EC), som kun er gældende i den Europæiske Union.

Por Se quiser deitar fora este produto, não o misture com o lixo comum. De acordo com a legislação que decorre da Directiva REEE – Resíduos de Equipamentos Eléctricos e Electrónicos (2002/96/CE), existe um sistema de recolha separado para os equipamentos electrónicos fora de uso, em vigor apenas na União Europeia.

Pol Jeżeli zamierzasz pozbyć się tego produktu, nie wyrzucaj go razem ze zwykłymi domowymi odpadkami. Według dyrektywy WEEE (Dyrektywa 2002/96/EC) obowią zującej w Unii Europejskiej dla używanych produktów elektronicznych należy stosować oddzielne sposoby utylizacji.

JM74932-00F

Information for Users on Collection and Disposal of used Batteries.

The symbol in this information sheet means that used batteries should not be mixed with general household waste.
For proper treatment, recovery and recycling of used batteries, please take them to applicable collection points.
For more information about collection and recycling of batteries, please contact your local municipality, your waste disposal service or the point of sale where you purchased the items.

Information on Disposal in other Countries outside the European Union.

This symbol is only valid in the European Union.
If you wish to discard used batteries, please contact your local authorities or dealer and ask for the correct method of disposal.

CITIZEN SYSTEMS JAPAN CO., LTD.
6-1-12, Tanashi-cho, Nishi-Tokyo-Shi,
Tokyo 188-8511, Japan
E-mail: sales-oe@systems.citizen.co.jp
http://www.citizen-systems.co.jp/

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