SCIENTIFIC CALCULATOR OPERATION GUIDE

< EL-531TG >

SHARP

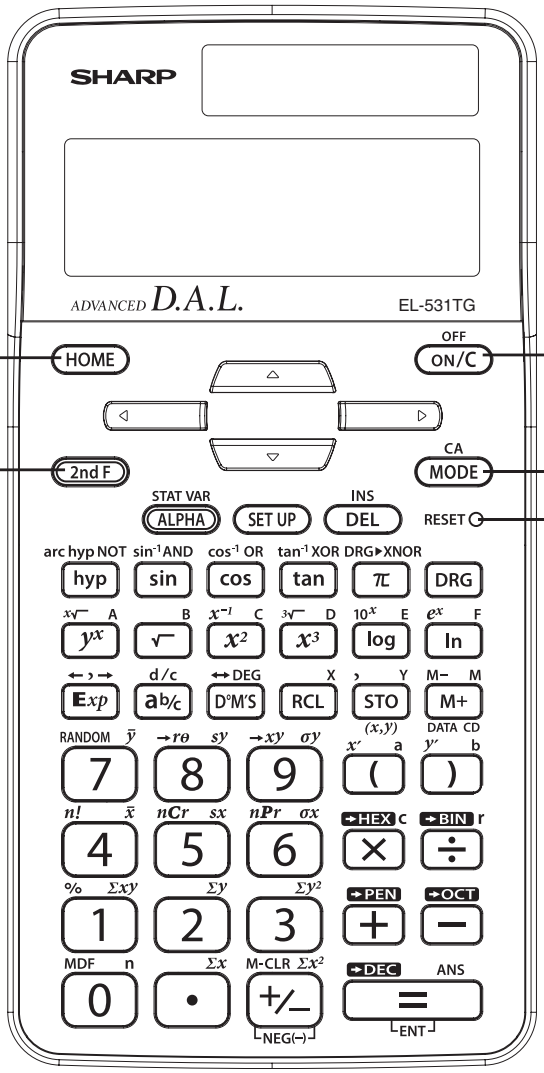
CONTENTS

How to Operate

≈Read Before Using≈

This operation guide has been written based on the EL-531TG.
Some functions described here are not featured on other models. In addition, key operations and symbols on the display may differ according to the model.

KEY LAYOUT



2nd function key

Pressing this key will enable the functions written above the calculator buttons.

HOME key

Pressing this key will return to NORMAL mode.

ON/C, OFF key

Direct function

ON/C

<Power on>

2nd function

2nd F OFF

<Power off>

Written in orange above the ON/C key

Mode key

This calculator can operate in three different modes as follows.

[Normal mode]

MODE 0

•Mode = 0; normal mode for performing normal arithmetic and function calculations.

[STAT-0 mode]

MODE 1 0

•Mode = 1; STAT-0 mode for performing 1-variable statistical calculations.

[STAT-1–6 mode]

MODE 1

•Mode = 1; STAT-1–6 mode for performing 2-variable statistical calculations.

When changing to the statistical sub-mode, press the corresponding number key after performing the operation to select the statistics mode (press MODE 1).

1 (LINE): Linear regression calculation

2 (QUAD): Quadratic regression calculation

3 (EXP): Exponential regression calculation

4 (LOG): Logarithmic regression calculation

5 (PWR): Power regression calculation

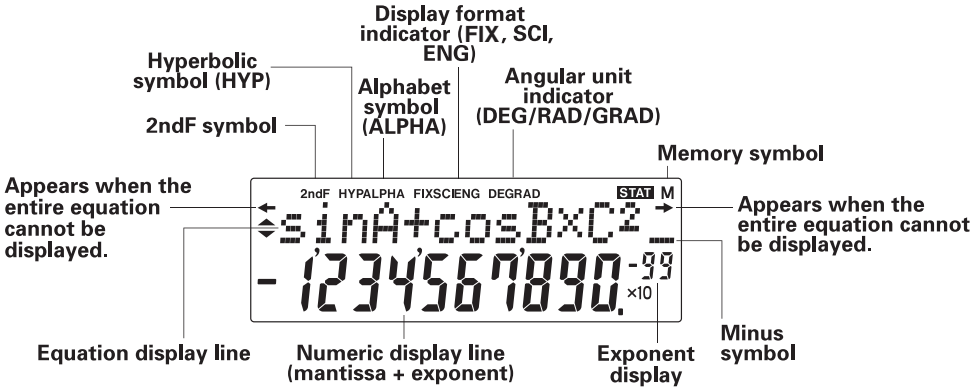
6 (INV): Inverse regression calculation

RESET SWITCH

If the calculator fails to operate normally, press the reset switch on the front to initialise the unit. The display format and calculation mode will return to their initial settings.

NOTE:
Pressing the reset switch will erase any data stored in memory.

DISPLAY PATTERN



The actual display does not appear like this.
This illustration is for explanatory purposes only.

DISPLAY FORMAT AND DECIMAL SETTING FUNCTION

For convenient and easy operation, this model can be used in one of four display modes. The selected display status is shown in the upper part of the display (Format Indicator).
Note: If more 0's (zeros) than needed are displayed when the ON/C key is pressed, check whether or not the calculator is set to a Special Display Format.

- Floating decimal point format (no symbol is displayed)
  Valid values beyond the maximum range are displayed in the form of a [10-digit (mantissa) + 2-digit (exponent)]
- Fixed decimal point format (FIX is displayed)
  Displays the fractional part of the calculation result according to the specified number of decimal places.
- Scientific notation (SCI is displayed)
  Frequently used in science to handle extremely small or large numbers.
- Engineering scientific notation (ENG is displayed)
  Convenient for converting between different units.

<Example> Let's compare the display result of [10000 ÷ 8.1 =] in each display format.

(specifies normal mode)

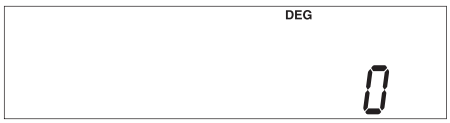
Note: The calculator has two settings for displaying a floating point number: NORM1 (default setting) and NORM2. In each display setting, a number is automatically displayed in scientific notation outside a preset range:

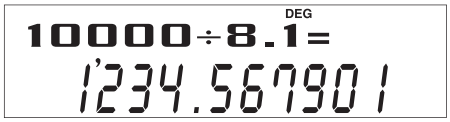
- NORM1: 0.000000001 x 9999999999
- NORM2: 0.01 x 9999999999

10000 [÷] 8.1 [=]

[SET UP] [0] [0] [SET UP] [1] [3]

Initial display

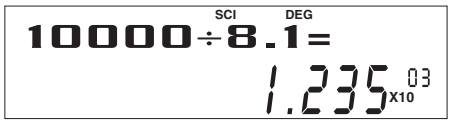




(normal mode)

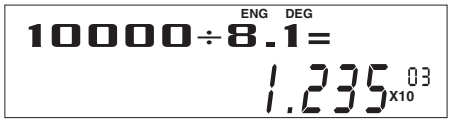
(FIX mode TAB = 3)

SET UP 0 1



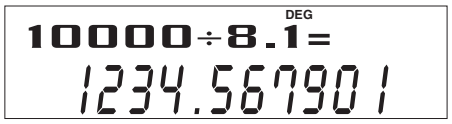
(SCI mode)

SET UP 0 2



(ENG mode)

SET UP 0 3



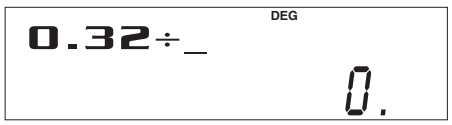
(normal mode)

EXPONENT DISPLAY

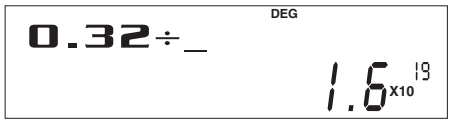
The distance from the earth to the sun is approx. 150,000,000 (1.5×10^8) km. Values such as this with many zeros are often used in scientific calculations, but entering the zeros one by one is a great deal of work and it's easy to make mistakes.
In such a case, the numerical values are divided into mantissa and exponent portions, displayed and calculated.

<Example> What is the number of electronics flowing in a conductor when the electrical charge across a given cross-section is 0.32 coulombs. (The charge on a single electron = 1.6×10^{-19} coulombs).

0.32 ÷



1.6 Exp 19



=

ANGULAR UNIT

Angular values are converted from DEG to RAD to GRAD with each push of the DRG key. This function is used when doing calculations related to trigonometric functions or coordinate geometry conversions.

Degrees (DEG is shown at the top of the display)

A commonly used unit of measure for angles. The angular measure of a circle is expressed as 360°.

Radians (RAD is shown at the top of the display)

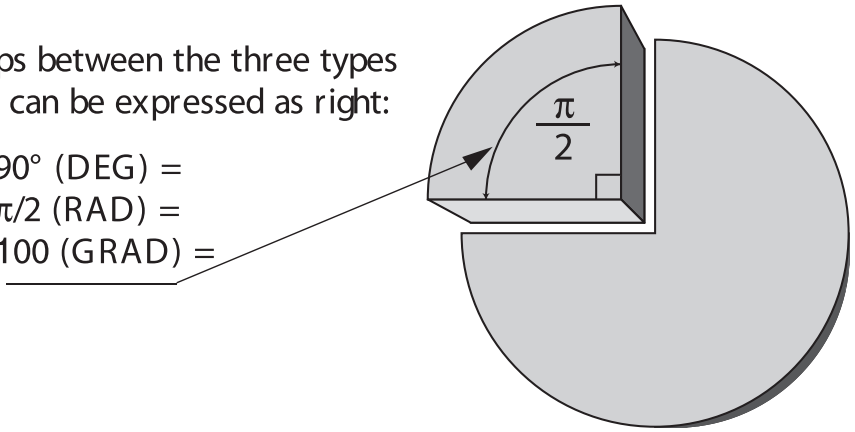
Radians are different than degrees and express angles based on the circumference of a circle. 180° is equivalent to π radians. Therefore, the angular measure of a circle is 2π radians.

Grads (GRAD is shown at the top of the display)

Grads are a unit of angular measure used in Europe, particularly in France. An angle of 90 degrees is equivalent to 100 grads.

The relationships between the three types of angular units can be expressed as right:

90° (DEG) =
π/2 (RAD) =
100 (GRAD) =

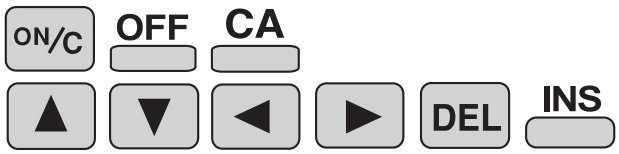


<Example> Check to confirm 90 degrees equaling π/2 radians equaling 100 grads. (π=3.14159...)

Angular indicator

Operation	Display
ON/C DRG ..... DRG (Select DEG mode)	DEG 0.
90 2nd F DRG▶	RAD 90▶RAD 1.570796327 (π/2)
2nd F DRG▶	GRAD ANS▶GRAD 100.
2nd F DRG▶	DEG ANS▶DEG 90.

ON/OFF, Entry Correction Keys



ON/C Turns the calculator on or clears the data. It also clears the contents of the calculator display and voids any calculator command; however, coefficients in 3-variable linear equations and statistics, as well as values stored in the independent memory in normal mode, are not erased.

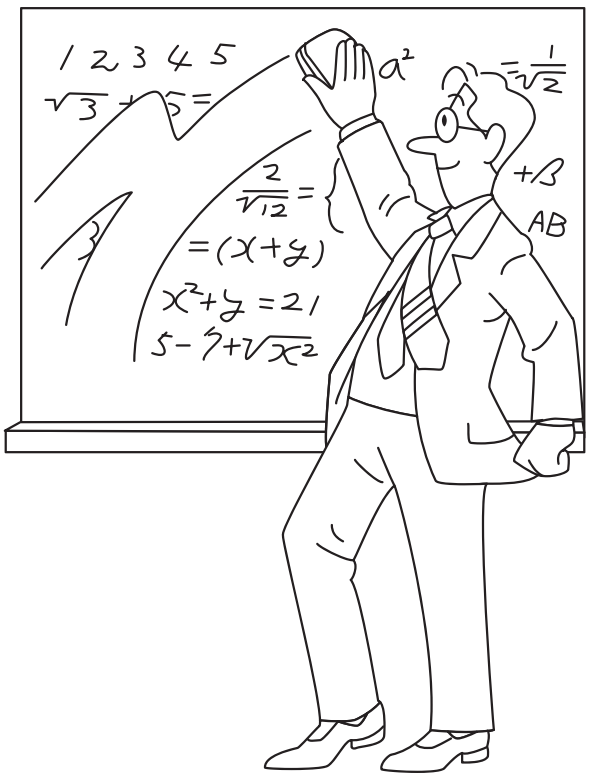
OFF Turns the calculator off.

CA Clears all internal values, including coefficients in 3-variable linear equations and statistics. Values stored in M memory in normal mode are not erased.

▲ **▼** These arrow keys are useful for Multi-Line playback, which lets you scroll through calculation steps one by one.

◀ **▶** **DEL** These keys are useful for editing equations. The ◀ key moves the cursor to the left, and the ▶ key moves the cursor to the right. The DEL key deletes the symbol/number at the cursor.

INS INS key inserts the symbol/number at the cursor.



Data Entry Keys [•] [+/–] [π] [Exp]

0 to 9 Numeric keys for entering data values.

[•] Decimal point key. Enters a decimal point.

[+/–] Enters minus symbol or sign change key.
Changes positive numbers to negative and negative numbers to positive.

[π] Enters π (3.14159...).
The constant π, used frequently in function calculations, is the ratio of the circumference of a circle to its diameter.

[Exp] Pressing this key switches to scientific notation data entry.

<Example> Provided the earth is moving around the sun in a circular orbit, how many kilometers will it travel in a year?

*The average distance between the earth and the sun being 1.496×10^8 km.

Circumference equals diameter x π; therefore,
$1.496 \times 10^8 \times 2 \times \pi$

Operation	Display
1 [•] 496 [Exp] 8	DEG 1.496 08 X10
[×] 2 [×] [π] [=]	DEG 1.496E08x2xπ → 939'964'522.

Random RANDOM

RANDOM Generates random numbers.
Random numbers are three-decimal-place values between 0.000 and 0.999. Using this function enables the user to obtain unbiased sampling data derived from random values generated by the calculator.

<Example>

2ndF RANDOM 0 ENT 0.*** (A random number has been generated.)

[Random Dice]
To simulate a die-rolling, a random integer between 1 and 6 can be generated by pressing 2ndF RANDOM 1 ENT. To generate the next random dice number, press ENT.

[Random Coin]
To simulate a coin flip, 0 (heads) or 1 (tails) can be randomly generated by pressing 2ndF RANDOM 2 ENT. To generate the next random coin number, press ENT.

[Random Integer]
An integer between 0 and 99 can be generated randomly by pressing 2ndF RANDOM 3 ENT.
To generate the next random integer, press ENT.

APPLICATIONS:
Building sample sets for statistics or research.

Modify MDF

MDF

Function to round calculation results.
Even after setting the number of decimal places on the display, the calculator performs calculations using a larger number of decimal places than that which appears on the display. By using this function, internal calculations will be performed using only the displayed value.

<Example> **FIX mode TAB = 1 (normal calculation)**

5 ÷ 9 = 0.6 (internally, 0.5555...)

× 9 = 5.0

Rounded calculation (MDF)

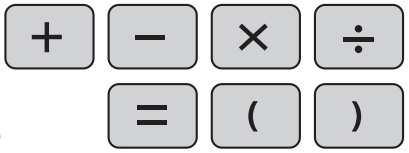
5 ÷ 9 = 0.6 (internally, 0.5555...)

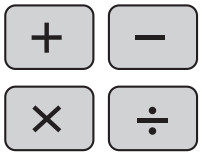
2ndF MDF (internally, 0.6)

× 9 = 5.4

APPLICATIONS:
Frequently used in scientific and technical fields, as well as business, when performing chained calculations.

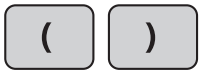
Basic Arithmetic Keys, Parentheses





The four basic operators. Each is used in the same way as a standard calculator:
+ (addition), – (subtraction), x (multiplication), and ÷ (division).

Finds the result in the same way as a standard calculator.



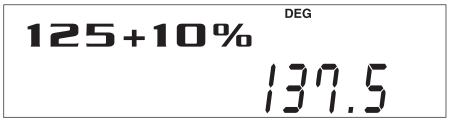
Used to specify calculations in which certain operations have precedence. You can make addition and subtraction operations have precedence over multiplication and division by enclosing them in parentheses.

Percent %

% For calculating percentages. Four methods of calculating percentages are presented as follows.

1) $125 increased by 10%...137.5

125 [+] 10 [2ndF] [%]

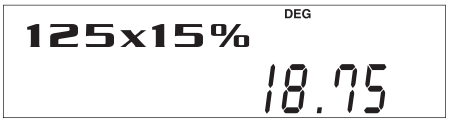


2) $125 reduced by 20%...100

125 [−] 20 [2ndF] [%]

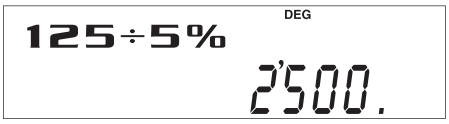
3) 15% of $125...18.75

125 [×] 15 [2ndF] [%]



4) When $125 equals 5% of X, X equals...2500

125 [÷] 5 [2ndF] [%]



Inverse, Square, Cube, xth Power of y, Square Root, Cube Root, xth Root of y

x^{-1} x^2 x^3 y^x $\sqrt{\ }$ $\sqrt[3]{\ }$ $\sqrt[x]{\ }$

x^{-1} Calculates the inverse of the value.

x^2 Squares the value.

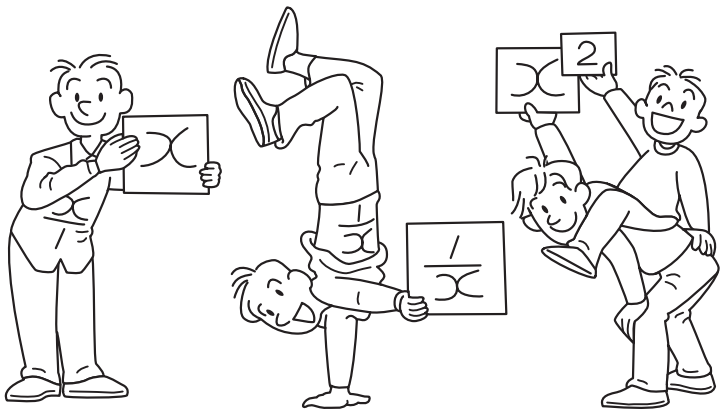
x^3 Cubes the value.

y^x Calculates exponential values.

$\sqrt{\ }$ Calculates the square root of the value.

$\sqrt[3]{\ }$ Calculates the cube root of the value.

$\sqrt[x]{\ }$ Calculates the x^{th} root of y.



<Example>

Operation	Display
2 × 2 × 2 × 2 =	2x2x2x2= 16.
2 y^x 4 =	2^4= 16.
4 2nd F $\sqrt[x]{\ }$ 16 =	4x √16= 2.

10 to the Power of x, Common Logarithm [log] [10^x]

[10^x] Calculates the value of 10 raised to the x^{th} power.

[log] Calculates logarithm, the exponent of the power to which 10 must be raised to equal the given value.

<Example>

Operation	Display
[2nd F] [10^x] 3 [=]	DEG 10^3= 1000.
[log] 1000 [=]	DEG log1000= 3.

e to the Power of x, Natural Logarithm [ln] [e^x]

[e^x] Calculates powers based on the constant e (2.718281828).

[ln] Computes the value of the natural logarithm, the exponent of the power to which e must be raised to equal the given value.

<Example>

Operation	Display
[2ndF] [e^x] 5 [=]	DEG e^5= 148.413159
[ln] 10 [=]	DEG ln10= 2.302585093

Factorials $n!$

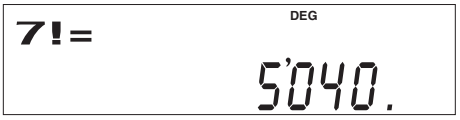
$n!$ The product of a given positive integer n multiplied by all the lesser positive integers from 1 to n-1 is indicated by n! and called the factorial of n.

<Example>

Operation

7 [2nd F] [$n!$] [=]

Display



c.f
n! = 1 x 2 x 3 x ...xn

APPLICATIONS:
Used in statistics and mathematics. In statistics, this function is used in calculations involving combinations and permutations.

Permutations, Combinations nPr nCr

nPr

This function finds the number of different possible orderings in selecting r objects from a set of n objects. For example, there are six different ways of ordering the letters ABC in groups of three letters—ABC, ACB, BAC, BCA, CAB, and CBA.
The calculation equation is ${}_3P_3 = 3 \times 2 \times 1 = 6$ (ways).

nCr

This function finds the number of ways of selecting r objects from a set of n objects. For example, from the three letters ABC, there are three ways we can extract groups of two different letters—AB, AC, and CB.
The calculation equation is ${}_3C_2$.

<Example>

Operation	Display
6 2ndF nPr 4 =	6P4= 360. DEG
6 2ndF nCr 4 =	6C4= 15. DEG

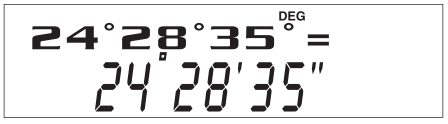
APPLICATIONS:
Used in statistics (probability calculations) and in simulation hypotheses in fields such as medicine, pharmaceutics, and physics. Also, can be used to determine the chances of winning in lotteries.

Time Calculation ↔DEG D°M′S

↔DEG Converts a sexagesimal value displayed in degrees, minutes, seconds to decimal notation. Also, converts a decimal value to sexagesimal notation (degrees, minutes, seconds).

D°M′S Inputs values in sexagesimal notation (degrees, minutes, seconds).

<Example> Convert 24° 28′ 35″ (24 degrees, 28 minutes, 35 seconds) to decimal notation. Then convert 24.476° to sexagesimal notation.

Operation	Display
24 D°M′S 28 D°M′S 35	
2nd F ↔DEG	
Convert to decimal notation	
2nd F ↔DEG	

Repeat last key operation to return to the previous display.

APPLICATIONS:
Used in calculations of angles and angular velocity in physics, and latitude and longitude in geography.

Fractional Calculations [a b/c] [d/c]

[a b/c] Inputs fractions and converts mutually between fractions and decimals.

[d/c] Converts between mixed numbers and improper fractions.

<Example> Add $3\frac{1}{2}$ and $\frac{5}{7}$, and convert to decimal notation.

Operation	Display
3 [a b/c] 1 [a b/c] 2 [+] 5 [a b/c] 7 [=]	3⌟1⌟2+5⌟7= 4⌟3⌟14.
[a b/c]	3⌟1⌟2+5⌟7= 4.214285714
[2nd F] [d/c]	3⌟1⌟2+5⌟7= 59⌟14.
[2nd F] [d/c]	3⌟1⌟2+5⌟7= 4⌟3⌟14.

Convert to decimal notation
Press once to return to the previous display

Convert to an improper fraction
Press once to return to the previous display

APPLICATIONS:
There is a wide variety of applications for this function because fractions are such a basic part of mathematics. This function is useful for calculations involving electrical circuit resistance.

Memory Calculations

STO RCL M+ M−

A ~ F X Y M

STO Stores displayed values in memories A~F, X, Y, M.

RCL Recalls values stored in A~F, X, Y, M.

M+ Adds the displayed value to the value in the independent memory M.

M− Subtracts the displayed value from the value in the independent memory M.

A ~ F X Y Temporary memories

M Independent memory

<Example 1>

Operation	Display
0 STO M (Enter 0 for M)	0⇒M 0.
25 × 27 M+	25x27M+ 675.
7 × 3 M+	7x3M+ 21.
RCL M	M= 696.

<Example 2>

Calculates $/¥ at the designated exchange rate.
$1 = ¥110
¥26,510 = $?
$2,750 = ¥?

Operation	Display
110 STO Y	110⇒Y 110.
26510 ÷ RCL Y =	26510÷Y= 241.
2750 × RCL Y =	2750xY= 302'500.

Last Answer Memory ANS

ANS Recalls the last answer calculated by pressing =

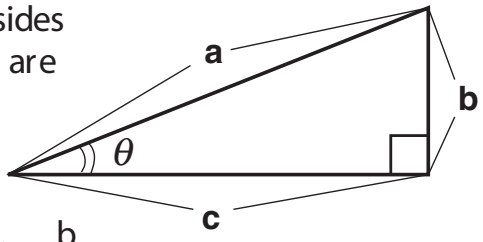
<Example> Solve for x first and then solve for y using x.

$$x = \sqrt{2} + 3 \quad \text{and} \quad y = 4 \div x$$

Operation	Display
√ 2 + 3 =	DEG √2+3= 4.414213562
4 ÷ ALPHA ANS =	DEG 4÷ANS= 0.906163678

Trigonometric Functions [sin] [cos] [tan]

Trigonometric functions determine the ratio of three sides of a right triangle. The combinations of the three sides are sin, cos, and tan. Their relations are:



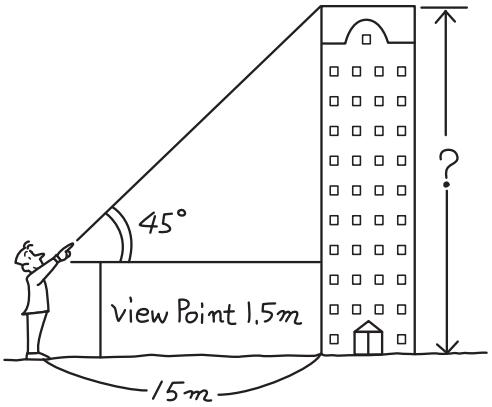
[sin] Calculates the sine of an angle. $\sin\theta = \frac{b}{a}$

[cos] Calculates the cosine of an angle. $\cos\theta = \frac{c}{a}$

[tan] Calculates the tangent of an angle. $\tan\theta = \frac{b}{c}$

<Example>

The angle from a point 15 meters from a building to the highest floor of the building is 45°. How tall is the building?



[DEG mode]

Operation

[tan] 45 [×] 15
[+] 1 [•] 5 [=]

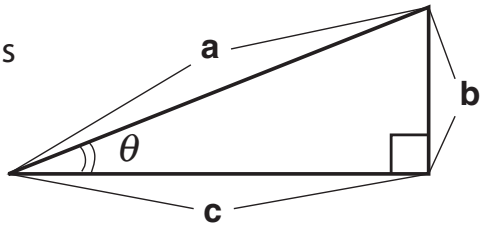
View point

Display

APPLICATIONS:
Trigonometric functions are useful in mathematics and various engineering calculations. They are often used in astronomical observations, civil engineering and in calculations involving electrical circuits, as well as in calculations for physics such as parabolic motion and wave motion.

Arc Trigonometric Functions $\sin^{-1}$ $\cos^{-1}$ $\tan^{-1}$

Arc trigonometric functions, the inverse of trigonometric functions, are used to determine an angle from ratios of a right triangle. The combinations of the three sides are $\sin^{-1}$, $\cos^{-1}$, and $\tan^{-1}$. Their relations are;



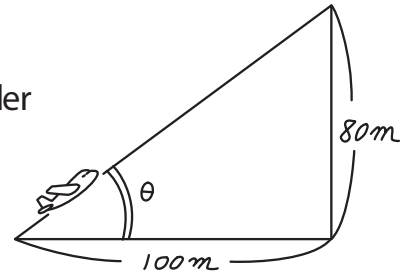
$\sin^{-1}$ (arc sine) Determines an angle based on the ratio b/a of two sides of a right triangle. $\theta = \sin^{-1}\frac{b}{a}$

$\cos^{-1}$ (arc cosine) Determines an angle based on the ratio c/a for two sides of a right triangle. $\theta = \cos^{-1}\frac{c}{a}$

$\tan^{-1}$ (arc tangent) Determines an angle based on the ratio a/b for two sides of a right triangle. $\theta = \tan^{-1}\frac{b}{c}$

<Example>

At what angle should an airplane climb in order to climb 80 meters in 100 meters?

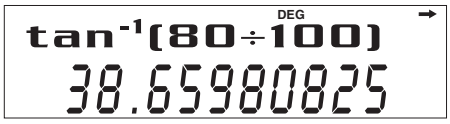


[DEG mode]

Operation

2ndF $\tan^{-1}$ (80 ÷ 100) =

Display



Hyperbolic Functions [hyp] [arc hyp]

hyp The hyperbolic function is defined by using natural exponents in trigonometric functions.

arc hyp Arc hyperbolic functions are defined by using natural logarithms in trigonometric functions.

APPLICATIONS:
Hyperbolic and arc hyperbolic functions are very useful in electrical engineering and physics.

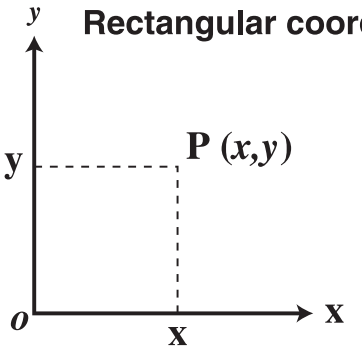
Coordinate Conversion →rθ →xy , ←,→

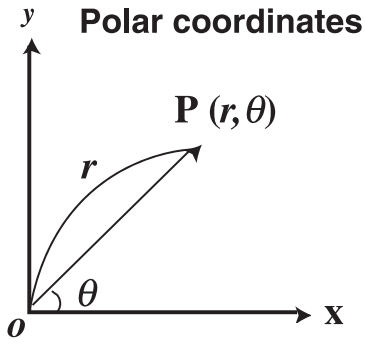
→rθ — Converts rectangular coordinates to polar coordinates (x, y → r, θ)

→xy — Converts polar coordinates to rectangular coordinates (r, θ → x, y)

, — Splits data used for dual-variable data input.

←,→ — Displays r, θ and x, y. (x ⇄ y or r ⇄ θ)





<Example> Determine the polar coordinates (r, θ) when the rectangular coordinates of Point P are (x = 7, y = 3).

[DEG mode]

Operation	Display
7 2ndF , 3 2ndF →rθ	r= 7.615773106 DEG
2ndF ←,→	θ= 23.19859051 DEG
7.6 2ndF , 23.2 2ndF →xy	x= 6.985428578 DEG
2ndF ←,→	y= 2.993958513 DEG

APPLICATIONS:
Coordinate conversion is often used in mathematics and engineering, especially for impedance calculations in electronics and electrical engineering.

Binary, Pental, Octal, Decimal, and Hexadecimal Operations (N-Base)

→BIN →PEN →OCT →HEX →DEC

This calculator can perform conversions between numbers expressed in binary, pental, octal, decimal, and hexadecimal systems. It can also perform the four basic arithmetic operations, calculations with parentheses and memory calculations using binary, pental, octal, decimal, and hexadecimal numbers. In addition, the calculator can carry out the logical operations AND, OR, NOT, NEG, XOR, and XNOR on binary, pental, octal, and hexadecimal numbers.

→BIN Converts to the binary system. "b" appears.

→PEN Converts to the pental system. "P" appears.

→OCT Converts to the octal system. "o" appears.

→HEX Converts to the hexadecimal system. "H" appears.

→DEC Converts to the decimal system. "b", "P", "o", and "H" disappear from the display.

Conversion is performed on the displayed value when these keys are pressed.

<Example 1> HEX(1AC) →BIN →PEN →OCT →DEC

Operation	Display
2ndF →HEX 1AC	DEG 1AC H
2ndF →BIN	DEG 1AC→BIN 110101100 b
2ndF →PEN	DEG 110101100→PE → 3203 P
2ndF →OCT	DEG 3203→OCT 654 o
2ndF →DEC	DEG 654→DEC 428

<Example 2> 1011 AND 101 = (BIN) →DEC

Operation	Display
ON/C 2ndF →BIN 1011 AND	DEG 1011AND_ 0 b
101 =	DEG 1011AND101= 1 b
2ndF →DEC	DEG 1→DEC 1

Statistics Function

The statistics function is excellent for analyzing qualities of an event. Though primarily used for engineering and mathematics, the function is also applied to nearly all other fields including economics and medicine.

DATA INPUT

DATA Enters data for statistical calculations.

CD Clears data input.

(x,y) Splits data used for dual-variable data input.
(Used for dual-variable statistical calculations.)

<Example 1> Here is a table of examination results. Input this data for analysis.

Data table 1

No.	1	2	3	4	5	6	7	8
Score	30	40	50	60	70	80	90	100
No. of pupils	2	4	5	7	12	10	8	2

Operation	Display
MODE 1 0 Select single-variable statistics mode	Stat 0
30 (x,y) 2 DATA	DATA SET= 1.
⋮	
100 (x,y) 2 DATA Score Number of pupils	DATA SET= 8.

"ANS" KEYS FOR 1-VARIABLE STATISTICS

$\bar{x}$ Calculates the average value of the data (sample data x).

sx Calculates the standard deviation for the data (sample data x).

σx Calculates the standard deviation of a data population (sample data x).

n Displays the number of input data (sample data x).

Σx Calculates the sum of the data (sample data x).

Σx^2 Calculates the sum of the data (sample data x) raised to the second power.

NOTE:
1. Sample data refers to data selected randomly from the population.
2. Standard deviation of samples is determined by the sample data shift from an average value.
3. Standard deviation for the population is standard deviation when the sample data is deemed a population (full data).

Let's check the results based on the previous data.

RCL $\bar{x}$ 69 (average value)

RCL sx 17.75686128 (standard deviation)

RCL σx 17.57839583 (standard deviation of the population)

RCL n 50 (total count of data)

RCL Σx 3450 (total)

DATA CORRECTION

Correction prior to pressing DATA immediately after a data entry: Delete incorrect data with ON/C, then enter the correct data.

Correction after pressing DATA:

Use ▲ ▼ to display the data previously entered.
Press ▼ to display data items in ascending (oldest first) order. To reverse the display order to descending (latest first), press the ▲ key. Each item is displayed with 'Xn=', 'Yn=', or 'Nn=' (n is the sequential number of the data set).
Display the data item to modify, input the correct value, then press DATA.
Using (x,y), you can correct the values of the data set all at once.

- When ▲ or ▼ appears, more data items can be browsed by pressing ▲ or ▼.
- To delete a data set, display an item of the data set to delete, then press 2ndF CD. The data set will be deleted.
- To add a new data set, press ON/C and input the values, then press DATA.

<Example 2>

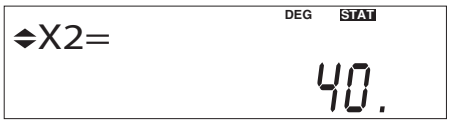
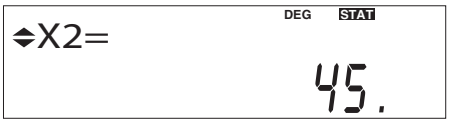
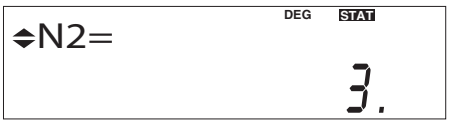
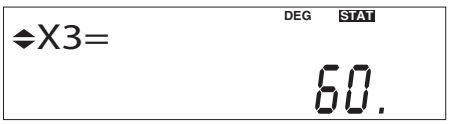
Data table 2

X: 30, 40, 40, 50

↓

X: 30, 45, 45, 45, 60

Operation	Display
MODE 1 0 Select single-variable statistics mode	Stat 0 0.
30 DATA	DATA SET= 1.
40 (x,y) 2 DATA	DATA SET= 2.
50 DATA	DATA SET= 3.

Operation	Display
▼ ▼ ▼	
45 (x,y) 3 DATA	
▼	
▼ 60 DATA	

APPLICATIONS:
Single-variable statistical calculations are used in a broad range of fields, including engineering, business, and economics. They are most often applied to analysis in atmospheric observations and physics experiments, as well as for quality control in factories.

<Example 3> The table below summarizes the dates in April when cherry blossoms bloom, and the average temperature for March in that same area. Determine basic statistical quantities for data X and data Y based on the data table.

Data table 3

	Year	2010	2011	2012	2013	2014	2015	2016	2017
x	Average temperature	6.2	7.0	6.8	8.7	7.9	6.5	6.1	8.2
y	Date blossoms bloom	13	9	11	5	7	12	15	7

Operation

MODE 1 1

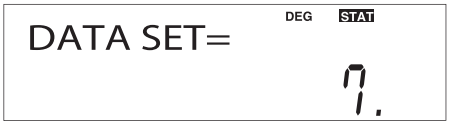
Display

Select dual-variable statistics mode and linear regression calculation in sub-mode.

6 • 2 (x,y) 13 DATA

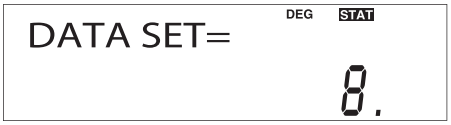
⋮

6 • 1 (x,y) 15 DATA



8 • 2 (x,y) 7 DATA

Temperature Date



"ANS" KEYS FOR 2-VARIABLE STATISTICS

In addition to the 1-variable statistic keys, the following keys have been added for calculating 2-variable statistics.

Σxy Calculates the sum of the product for sample data x and sample data y.

Σy Calculates the sum of the data (sample datay).

Σy^2 Calculates the sum of the data (sample datay) raised to the second power.

$\bar{y}$ Calculates the average value of the data (sample datay).

sy Calculates the standard deviation for the data (sample datay).

σy Calculates the standard deviation of a data population (sample datay).

NOTE:
The codes for basic statistical quantities of sample data x and their meanings are the same as those for single-variable statistical calculations.

Let' s check the results based on the previous data.

RCL	$\bar{x}$	7.175	(Average for data x)
RCL	sx	0.973579551	(Standard deviation for data x)
RCL	σx	0.91070028	(Standard deviation of the population for data x)
RCL	$\bar{y}$	9.875	(Average for data y)
RCL	sy	3.440826313	(Standard deviation for datay)
RCL	σy	3.218598297	(Standard deviation of the population for datay)
RCL	n	8	(Total count of data)
RCL	Σx	57.4	(Sum of data x)
RCL	Σx^2	418.48	(Sum of data x raised to the second power)
RCL	Σxy	544.1	(Sum of the product of data x and data y)
RCL	Σy	79	(Sum of datay)
RCL	Σy^2	863	(Sum of data y raised to the second power)

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