

SCIENTIFIC CALCULATOR

WriteView

MODEL EL-W516T

OPERATION MANUAL

17ASC75E2

INTRODUCTION

About the calculation examples (including some formulas and tables), refer to the second half of this manual. After reading this manual, store it in a convenient location for future reference. Note: Some of the models described in this manual may not be available in some countries.

Operational Notes

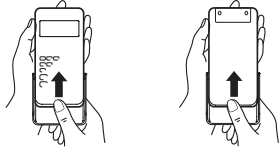
- Do not carry the calculator around in your back pocket, as it may break when you sit down. The display is made of glass and is particularly fragile.
- Keep the calculator away from extreme heat such as on a car dashboard or near a heater, and avoid exposing it to excessively humid or dusty environments.
- Since this product is not waterproof, do not use it or store it where fluids, for example water, can splash onto it. Raindrops, water spray, juice, coffee, steam, perspiration, etc. will also cause malfunction.
- Clean with a soft, dry cloth. Do not use solvents or a wet cloth. Avoid using a rough cloth or anything else that may cause scratches.
- Do not drop it or apply excessive force.
- Never dispose of batteries in a fire.
- Keep batteries out of the reach of children.
- For the sake of your health, try not to use this product for long periods of time. If you need to use the product for an extended period, be sure to allow your eyes, hands, arms, and body adequate rest periods (about 10–15 minutes every hour). If you experience any pain or fatigue while using this product, discontinue use immediately. If the discomfort continues, please consult a doctor.
- This product, including accessories, may change due to upgrading without prior notice.

NOTICE

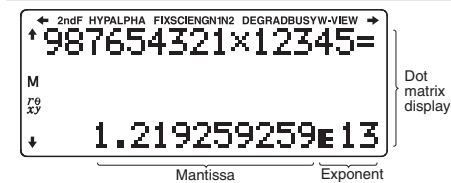
- SHARP strongly recommends that separate permanent written records be kept of all important data. Data may be lost or altered in virtually any electronic memory product under certain circumstances. Therefore, SHARP assumes no responsibility for data lost or otherwise rendered unusable whether as a result of improper use, repairs, defects, battery replacement, use after the specified battery life has expired, or any other cause.
- SHARP will not be liable nor responsible for any incidental or consequential economic or property damage caused by misuse and/or malfunctions of this product and its peripherals, unless such liability is acknowledged by law.

- Press the RESET switch (on the back), with the tip of a ball-point pen or similar object, only in the following cases. Do not use an object with a breakable or sharp tip. Note that pressing the RESET switch erases all data stored in memory.
 - When using for the first time
 - After replacing the battery
 - To clear all memory contents
 - When an abnormal condition occurs and all keys are inoperative
- If service should be required on this calculator, have the calculator serviced in the region (country) where you purchased it.

Hard Case



DISPLAY



- During actual use, not all symbols are displayed at the same time.
- Only the symbols required for the usage currently being explained are shown in the display and calculation examples.

- Indicates that some contents are hidden in the directions shown.
- 2ndF: Appears when (2ndF) is pressed, indicating that the functions shown in the same color as (2ndF) are enabled.
- HYP: Indicates that (HYP) has been pressed and the hyperbolic functions are enabled. If (2ndF) (HYP) is pressed, the symbols 2ndF HYP appear, indicating that inverse hyperbolic functions are enabled.
- ALPHA: Appears when (ALPHA) is pressed, indicating that the functions shown in the same color as (ALPHA) are enabled. Appears when (STO) or (RCL) is pressed, and entry (recall) of memory contents can be performed.
- FIX/SCI/ENG/N1/N2: Indicates the notation used to display a value and changes by SET UP menu. N1 is displayed on-screen as "NORM1", and N2 as "NORM2".

- DEG/RAD/GRAD: Indicates angular units.
- BUSY: Appears during the execution of a calculation.
- W-VIEW: Indicates that the WriteView editor is selected.
- M: Indicates that a numerical value is stored in the independent memory (M).
- r°/xY: Indicates the mode of expression for results in COMPLEX mode.

BEFORE USING THE CALCULATOR

Press (ON/C) to turn the calculator on. The data that was on-screen when the power was turned off will appear on the display. Press (2ndF) (OFF) to turn the calculator off.

Key Notations Used in this Manual

e^x E To specify e^x : (2ndF) E^x
 In To specify In: In
 To specify E: (ALPHA) E

- Functions that are printed in gray adjacent to the keys are effective in specific modes.
- The multiplication operator "x" is differentiated from the letter "X" in this manual as follows:
 - To specify the multiplication operator: (x)
 - To specify the letter "X": (ALPHA) (X)
- In certain calculation examples, where you see the (LINE) symbol, the key operations and calculation results are shown as they would appear in the Line editor.
- In each example, press (ON/C) to clear the display first. Unless otherwise specified, calculation examples are performed in the WriteView editor ((2ndF) (SETUP) (2) (0) (0)) with the default display settings ((2ndF) (MCLR) (0)).

Clearing the Entry and Memories

Operation	Entry (Display)	A-F, M, X, Y	D1-D3	ANS	STAT ¹	matA-D vectA-D
(ON/C)	○	X	X	X	X	X
(2ndF) (CA)	○	X	X	○	○	○
Mode selection (MODE)	○	X	X	X	X ²	○
(2ndF) (MCLR) (0)	○	○	X	X	X	X
(2ndF) (MCLR) (1) (0)	○	○	○	○	○	○
(2ndF) (MCLR) (2) (0) (0) ³	○	○	○	○	○	○
RESET switch ³	○	○	○	○	○	○

- : Clear X: Retain
- ¹ Statistical data (entered data)
- ² Cleared when changing between sub-modes in STAT mode.
- ³ The RESET operation will erase all data stored in memory and restore the calculator's default settings. The username you stored using the name display function will be cleared as well.

Memory clear key

- Press (2ndF) (MCLR) to display the menu.
- To initialize the display settings, press (0). The parameters are set as follows:
 - Angular unit: DEG
 - Display notation: NORM1
 - N-base: DEC
 - Recurring decimal: OFF

Mode Selection

- NORMAL mode: (MODE) (0)
Used to perform arithmetic operations and function calculations.
- STAT mode: (MODE) (1)
Used to perform statistical operations.
- TABLE mode: (MODE) (2)
Used to illustrate the changes in values of one or two functions in table format.
- COMPLEX mode: (MODE) (3)
Used to perform complex number calculations.
- EQUATION mode: (MODE) (4)
Used to solve equations.
- MATRIX mode: (MODE) (5)
Used to perform matrix calculations.
- VECTOR mode: (MODE) (6)
Used to perform vector calculations.
- DISTRIBUTION mode: (MODE) (7)
Used to perform distribution calculations.
- DRILL mode: (MODE) (8)
Used to practice math and multiplication table drills.

HOME Key

Press (HOME) to return to NORMAL mode from other modes. Note: Equations and values currently being entered will disappear, in the same way as when the mode is changed.

SET UP Menu

Press (2ndF) (SETUP) to display the SET UP menu. Press (ON/C) to exit the SET UP menu. Note: You can press (BS) to return to the previously displayed parent menu.

Determination of the angular unit (degrees, radians, and grades)

- DEG (°): (2ndF) (SETUP) (0) (0) (default)
- RAD (rad): (2ndF) (SETUP) (0) (1)
- GRAD (g): (2ndF) (SETUP) (0) (2)

Selecting the display notation and decimal places

Two settings of Floating point (NORM1 and NORM2), Fixed decimal point (FIX), Scientific notation (SCI), and Engineering notation (ENG).

- When (2ndF) (SETUP) (1) (0) (FIX) or (2ndF) (SETUP) (1) (2) (ENG) is pressed, the number of decimal places (TAB) can be set to any value between 0 and 9.
- When (2ndF) (SETUP) (1) (1) (SCI) is pressed, the number of significant digits can be set to any value between 0 and 9. Entering 0 will set a 10-digit display.

Setting the floating point number system in scientific notation

NORM1 (the default) and NORM2. A number is automatically displayed in scientific notation outside a preset range:

- NORM1 ((2ndF) (SETUP) (1) (3)): $0.000000001 \leq |x| \leq 9,999,999,999$
- NORM2 ((2ndF) (SETUP) (1) (4)): $0.01 \leq |x| \leq 9,999,999,999$

Selecting the editor and setting the answer display

This calculator has the following two editors in NORMAL mode: WriteView and Line. Set the display format for numerical calculation results in WriteView editor.

The WriteView editor

EXACT(a/b,√,π) (2ndF) (SETUP) (2) (0) (0) (default)
 APPROX. (2ndF) (SETUP) (2) (0) (1)

The Line editor

(2ndF) (SETUP) (2) (1)

Notes:

- When "EXACT(a/b,√,π)" is set, results will appear in fraction format or irrational number format (including π and √) when display is possible.
- When "APPROX." is set, results will be decimal display or fraction display, and will be not shown in irrational number format (including π and √).
- Press (CHANGE) to change the calculation results to another format that can be displayed.

Adjusting the display contrast

Press (2ndF) (SETUP) (3), then (+) or (-) to adjust the contrast. Press (ON/C) to exit.

Insert and overwrite entry methods

When using the Line editor, you can change the entry method from "INSERT" (the default) to "OVERWRITE". After you switch to the overwrite method (by pressing (2ndF) (SETUP) (4) (1)), the triangular cursor will change to a rectangular one, and the number or function underneath it will be overwritten as you make entries.

Setting the recurring decimal

In NORMAL mode, calculation results can be shown in a recurring decimal format.

- Recurring decimal is OFF: (2ndF) (SETUP) (5) (0) (default)
- Recurring decimal is ON: (2ndF) (SETUP) (5) (1)
- In the WriteView editor, the recurring part is indicated by "—". In the Line editor, the recurring part is indicated in parentheses.
- If over 10 digits, including the recurring part, the result cannot be displayed in recurring decimal format.

Setting of the decimal point

You can show the decimal point in the calculation result as either a dot or a comma.

- DOT: (SETUP) (6) (0) (default)
- COMMA: (SETUP) (6) (1)
- During entry, the decimal point is only shown as a dot.

Name display function

You can save a username in this calculator. When you turn the power off, the saved username is displayed momentarily. Up to 32 characters may be saved, split over two lines.

- Entering and editing the username:
- Press (2ndF) (SETUP) (7). The editing screen appears with a flashing cursor.
 - Use (▲) and (▼) to scroll through the available characters.
 - Pressing (◀) or (▶) moves the cursor to the left or right. To modify a character, use (◀) or (▶) to move the cursor to the character, then select another character using (▲) or (▼).
 - Repeat steps 2 and 3 above to continue entering characters.
 - Press (□) to save and quit.
- Note: Press (2ndF) (CA) in the editing screen to clear all the characters.

ENTERING, DISPLAYING, AND EDITING THE EQUATION

The WriteView Editor

Entry and display

In the WriteView editor, you can enter and display fractions or certain functions as you would write them.

- The WriteView editor can be used in NORMAL mode.

Displaying calculation results (when EXACT is selected)

When possible, calculation results will be displayed using fractions, √, and π. When you press (CHANGE), the display will cycle through the following display styles:

- Mixed fractions (with or without π) → improper fractions (with or without π) → decimal numbers
- Proper fractions (with or without π) → decimal numbers
- Irrational numbers (square roots, fractions made using square roots) → decimal numbers

Notes:

- In the following cases, calculation results may be displayed using √:
 - Arithmetic operations and memory calculations
 - Trigonometric calculations
- In trigonometric calculations, when entering values such as those in the table to the right, results may be shown using √.

	Entry value
DEG	multiples of 15
RAD	multiples of $\frac{1}{12} \pi$
GRAD	multiples of $\frac{5}{3}$
- Improper/proper fractions will be converted to and displayed as decimal numbers if the number of digits used in their expression is greater than nine. In the case of mixed fractions, the maximum number of displayable digits (including integers) is eight.
- If the number of digits in the denominator of a fractional result that uses π is greater than three, the result is converted to and displayed as a decimal number.

DISTRIBUTION FUNCTIONS

The calculator has distribution features to find statistical calculations. Press $(MODE)$ (7) , and select the type (NORMAL, BINOMIAL, POISSON), and then select the desired distribution function. Note: Calculation results are stored in ANS memory.

Normal Distribution

Normal pdf

Calculates the probability density of the specified value x for the normal distribution with the specified mean (μ) and standard deviation (σ).

Normal cdf

Calculates the probability of a specified interval x_1 - x_2 for the normal distribution with the specified mean (μ) and standard deviation (σ).

Inverse Normal

Calculates the inverse cumulative normal distribution function for a given area (a) under the normal distribution curve specified by mean (μ) and standard deviation (σ).

Binomial Distribution

Binomial pdf

Calculates a probability density at x for the discrete binomial distribution with the specified trial number (n) and probability of success (p) on each trial.

Binomial cdf

Calculates a cumulative probability at x for the discrete binomial distribution with the specified trial number (n) and probability of success (p) on each trial.

Poisson Distribution

Poisson pdf

Calculates a probability at x for the Poisson distribution with the specified mean (μ).

Poisson cdf

Calculates a cumulative probability at x for the Poisson distribution with the specified mean (μ).

Find the normal distribution probability density for $x = 65$ when the normal distribution of the test score averages is 60 with a standard deviation of 6.

MODE (7) 0 Normal pdf
0 65 ENTER 60
ENTER 6
ANS = 0.046985312

Calculate the probability of range $x = 54$ to 66 in the above sample.

MODE (7) 0 Normal cdf
1 54 ENTER 66
ENTER 60 ENTER 6
ANS = 0.682689492

Find the value of x for the probability of 0.8 in the above sample.

MODE (7) 0 Inverse Normal
2 0.8 ENTER 60
ENTER 6
ANS = 65.0497274

Find the probability density for 15 trials with $x = 7$, for the binomial distribution with success probability of 30%.

MODE (7) 1 Binomial pdf
0 7 ENTER 15
ENTER 0.3
ANS = 0.081130033

Calculate the probability of range up to $x = 7$ (success number) in the above sample.

MODE (7) 1 Binomial cdf
1 7 ENTER 15
ENTER 0.3
ANS = 0.949987459

Find the probability density of $x = 4$, for the mean of a Poisson distribution of 3.6.

MODE (7) 2 Poisson pdf
0 4 ENTER 3.6
ANS = 0.191222339

Find the probability within the range up to $x = 4$.

MODE (7) 2 Poisson cdf
1 4 ENTER 3.6
ANS = 0.706438449

DRILL MODE

Math Drill: (MODE) (8) (0)

Math operation questions with positive integers and 0 are displayed randomly. It is possible to select the number of questions and operator type.

Multiplication Table (X Table): (MODE) (8) (1)

Questions from each row of the multiplication table (1 to 12) are displayed serially or randomly.

To exit DRILL mode, press (MODE) and select another mode.

Using Math Drill and X Table

- Press (MODE) (8) (0) for Math Drill or (MODE) (8) (1) for X Table.
- Math Drill: Use (▲) and (▼) to select the number of questions (25, 50, or 100).
X Table: Use (▲) and (▼) to select a row in the multiplication table (1 to 12).
- Math Drill: Use (◀) and (▶) to select the operator type for questions (+, -, ×, ÷, +, or + × +).
X Table: Use (◀) and (▶) to select the order type ("Serial" or "Random").
- Press (ENTER) to start.
When using Math Drill or X Table (random order only), questions are randomly selected and will not repeat except by chance.
- Enter your answer. If you make a mistake, press (ON/C) or (BS) to clear any entered numbers, and enter your answer again.
- Press (ENTER).
 - If the answer is correct, "✓" appears and the next question is displayed.
 - If the answer is wrong, "✗" appears and the same question is displayed. This will be counted as an incorrect answer.
 - If you press (ENTER) without entering an answer, the correct answer is displayed and then the next question is displayed. This will be counted as an incorrect answer.
- Continue answering the series of questions by entering the answer and pressing (ENTER).
- After you finish, press (ENTER) and the number and percentage of correct answers are displayed.
- Press (ENTER) to return to the initial screen for your current drill.

Ranges of Math Drill Questions

The range of questions for each operator type is as follows.

- + Addition operator: "0 + 0" to "20 + 20"
 - Subtraction operator: "0 - 0" to "20 - 20"; answers are positive integers and 0.
 × Multiplication operator: "1 × 0" or "0 × 1" to "12 × 12"
 ÷ Division operator: "0 ÷ 1" to "144 ÷ 12"; answers are positive integers from 1 to 12 and 0, dividends of up to 144, and divisors of up to 12.
 + - × ÷ Mixed operators: Questions within all the above ranges are displayed.

ERRORS AND CALCULATION RANGES

Errors

An error will occur if an operation exceeds the calculation ranges, or if a mathematically illegal operation is attempted. When an error occurs, pressing (◀) or (▶) automatically moves the cursor back to the place in the equation where the error occurred. Edit the equation or press (ON/C) or (2ndF) (CA) to clear the equation.

Error codes and error types

- ERROR 01: Syntax error**
 • An attempt was made to perform an invalid operation.
 Ex. 2 (+) (-) 5 (=)
- ERROR 02: Calculation error**
 • The absolute value of an intermediate or final calculation result equals or exceeds 10^{100} .
 • An attempt was made to divide by zero (or an intermediate calculation resulted in zero).
 • The calculation ranges were exceeded while performing calculations.
 • 0 or a negative number was entered as a step value in TABLE mode. The absolute value of a starting value or a step value equals or exceeds 10^{100} in TABLE mode.
 • When the number to be factored into primes is greater than 2 and other than a 10-digit positive integer, or when the result of prime factorization is a negative number, decimal, fraction, $\sqrt{\quad}$, or π .
- ERROR 03: Nesting error**
 • The available number of buffers was exceeded. (There are 10 buffers* for numeric values and 64 buffers for calculation instructions).
 • 5 buffers in COMPLEX mode, and 1 buffer for matrix/vector data.
- ERROR 04: Data over error**
 • Data items exceeded 100 in STAT mode.
- ERROR 07: Definition error**
 • Matrix definition error or the attempted entering of an invalid value.
- ERROR 08: DIM unmatched error**
 • Matrix/vector dimensions inconsistent while calculating.
- ERROR 10: Undefined error**
 • Undefined matrix/vector used in calculation.

Alert Messages

- Cannot delete!
 • The selected item cannot be deleted by pressing (BS) or (2ndF) (DEL) in the WriteView editor.
 Ex. (◀) 5 (▶) (x²) (◀) (BS)
 In this example, delete the exponent before attempting to delete the parentheses.

- Cannot call!
 • The function or operation stored in definable memory (D1 to D3) cannot be called.
 Ex. An attempt was made to recall a statistical variable from within NORMAL mode.

Buffer full!

- The equation (including any calculation ending instructions) exceeded its maximum input buffer (159 characters in the WriteView editor or 161 characters in the Line editor). An equation may not exceed its maximum input buffer.

Calculation Ranges

- Within the ranges specified, this calculator is accurate to ± 1 of the 10th digit of the mantissa. However, a calculation error increases in continuous calculations due to accumulation of each calculation error. (This is the same for y^x , x^y , $n!$, e^x , In, Matrix/Vector calculations, II, etc., where continuous calculations are performed internally.) Additionally, a calculation error will accumulate and become larger in the vicinity of inflection points and singular points of functions.
- Calculation ranges
 $\pm 10^{-99}$ to $\pm 9.999999999 \times 10^{99}$ and 0.
 If the absolute value of an entry or a final or intermediate result of a calculation is less than 10^{-99} , the value is considered to be 0 in calculations and in the display.

Display of results using $\sqrt{\quad}$ (when EXACT is selected)

- Calculation results may be displayed using $\sqrt{\quad}$ when all of the following conditions are met:
- When intermediate and final calculation results are displayed in the following form:

$$\pm \frac{a\sqrt{b}}{e} \pm \frac{c\sqrt{d}}{f}$$
 - When each coefficient falls into the following ranges:
 $1 \leq a < 100$; $1 < b < 1,000$; $0 \leq c < 100$;
 $1 \leq d < 1,000$; $1 \leq e < 100$; $1 \leq f < 100$
 - When the number of terms in the intermediate and final calculation results is one or two.
- Note: The result of two fractional terms that include $\sqrt{\quad}$ will be reduced to a common denominator.

BATTERY REPLACEMENT

Notes on Battery Replacement

- Improper handling of batteries can cause electrolyte leakage or explosion. Be sure to observe the following handling rules:
- Make sure the new battery is the correct type.
 - When installing, orient the battery properly as indicated in the calculator.
 - The battery is factory-installed before shipment, and may be exhausted before it reaches the service life stated in the specifications.

Notes on erasure of memory contents

When the battery is replaced, the memory contents are erased. Erasure can also occur if the calculator is defective or when it is repaired. Make a note of all important memory contents in case accidental erasure occurs.

When to Replace the Battery

If the display has poor contrast or nothing appears on the display when (ON/C) is pressed in dim lighting, even after adjusting the display contrast, it is time to replace the battery.

Cautions

- An exhausted battery left in the calculator may leak and damage the calculator.
- Fluid from a leaking battery accidentally entering an eye could result in serious injury. Should this occur, wash with clean water and immediately consult a doctor.
- Should fluid from a leaking battery come in contact with your skin or clothes, immediately wash with clean water.
- If the product is not to be used for some time, to avoid damage to the unit from a leaking battery, remove it and store in a safe place.
- Do not leave an exhausted battery inside the product.
- Keep batteries out of the reach of children.
- Explosion risk may be caused by incorrect handling.
- Do not throw batteries into a fire as they may explode.

Replacement Procedure

- Turn the power off by pressing (2ndF) (OFF).
- Remove two screws. (Fig. 1)
- Lift the battery cover to remove.
- Remove the used battery by prying it out with a ball-point pen or other similar pointed device. (Fig. 2)
- Install one new battery. Make sure the "+" side is facing up.
- Replace the cover and screws.
- Press the RESET switch (on the back) with the tip of a ball-point pen or similar object.
- Adjust the display contrast. See "Adjusting the display contrast". And then press (ON/C).
- Make sure that the display appears as shown below. If the display does not appear as shown, remove the battery, reinstall it, and check the display once again.

Fig. 1

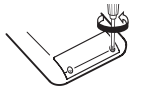


Fig. 2



Automatic Power Off Function

This calculator will turn itself off to save battery power if no key is pressed for approximately 10 minutes.

SPECIFICATIONS

Display:	96 × 32 dot matrix liquid crystal display
Display of calculation results:	Mantissa: 10 digits Exponent: 2 digits
Internal calculations:	Mantissas of up to 14 digits
Pending operations:	64 calculations 10 numeric values (5 numeric values in COMPLEX mode, and 1 numeric value for Matrix/Vector data.)
Power source:	Built-in solar cells 1.5 V --- (DC): Backup battery (Alkaline battery (LR44 or equivalent) × 1)
Operating time:	Approx. 3,000 hours when continuously displaying 55555 at 25°C (77°F), using the alkaline battery only
Operating temperature:	0°C–40°C (32°F–104°F)
External dimensions:	80 mm (W) × 166 mm (D) × 15 mm (H) 3-5/32" (W) × 6-17/32" (D) × 19/32" (H)
Weight:	Approx. 113 g (0.25 lb) (including battery)

SHARP®

CALCULATION EXAMPLES
EXEMPLES DE CALCUL
EJEMPLOS DE CÁLCULO

WriteView EL-W516T

1 [SETUP] (FSE)

100000 ÷ 3 =	[ON/C] 100000 [÷] 3	33'333.33333
[NORM1]	[2ndF] [CHANGE] [CHANGE]	
→ [FIX: TAB 2]	[2ndF] [SETUP] [1] [0] 2	33'333.33
→ [SCI: SIG 2]	[2ndF] [SETUP] [1] [1] 2	3.3E04
→ [ENG: TAB 2]	[2ndF] [SETUP] [1] [2] 2	33.33E03
→ [NORM1]	[2ndF] [SETUP] [1] [3] 2	33'333.33333

2 [SETUP] (EDITOR)

→ [APPROX.]	[ON/C] [2ndF] [SETUP] [2] [0] [1]	0.
1 ÷ 2 =	1 [÷] 2 [=]	0.5
→ [EXACT(a/b, √, π)]	[ON/C] [2ndF] [SETUP] [2] [0] [0]	0.
1 ÷ 2 =	1 [÷] 2 [=]	$\frac{1}{2}$

3 [SETUP] (RECURRING DECIMAL)

→ [ON]	[ON/C] [2ndF] [SETUP] [5]	0.
611 ÷ 495 =	611 [÷] 495 [=]	$1\frac{116}{495}$
	[CHANGE]	$\frac{611}{495}$
	[CHANGE]	1.234
	[CHANGE]	1.234343434
	[CHANGE]	$1\frac{116}{495}$
LINE	611 [÷] 495 [=]	1.2(34)
	[CHANGE]	1.234343434
	[CHANGE]	1r116r495
	[CHANGE]	611r495
	[CHANGE]	1.2(34)
→ [OFF]	[ON/C] [2ndF] [SETUP] [5]	0.
	[0]	

4 [CHANGE]

$\frac{2}{5} + \frac{3}{4} =$	[ON/C] 2 [a/b] 5 [▶] [+] [a/b] 3 [▶] 4	$1\frac{3}{20}$
	[CHANGE]	$\frac{23}{20}$
	[CHANGE]	1.15
	[CHANGE]	$1\frac{3}{20}$
$\sqrt{3} \times \sqrt{5} =$	[√] 3 [▶] [×] [√] 5	$\sqrt{15}$
	[CHANGE]	3.872983346
sin 45 =	[sin] 45 [=]	$\frac{\sqrt{2}}{2}$
	[CHANGE]	0.707106781

5	[▲] [▼]	
	[2ndF] [CA]	0.
①	3 ([] 5 [+] 2 []) [=]	21.
②	3 × 5 + 2 =	17.
③	(5 + 3) × 2 =	16.
→ ①	[2ndF] [▲]	21.
→ ②	[▼]	17.
→ ①	[▲]	21.
→ ③	[2ndF] [▼]	16.

6	[+] [-] [×] [÷] ([] [)] [(-)] [Exp]	
45 + 285 ÷ 3 =	[ON/C] 45 [+] 285 [÷] 3	140.
(18 + 6) ÷ (15 - 8) =	([] 18 [+] 6 []) [÷] [(] 15 [-] 8 []) [=]	$3\frac{3}{7}$
42 × -5 + 120 =	42 [×] [(-)] 5 [+] 120 [=]	-90.
(5 × 10 ³) ÷ (4 × 10 ⁻³) =	5 [Exp] 3 [÷] 4 [Exp] [(-)] 3 [=]	1'250'000.

7		
34 + 57 =	34 [+] 57 [=]	91.
45 ÷ 57 =	45 [÷] 57 [=]	102.
68 × 25 =	68 [×] 25 [=]	1'700.
68 × 40 =	68 [×] 40 [=]	2'720.

8	[<ENG] [ENG>]	
6789 =	[ON/C] 6789 [=]	6'789.
	[ALPHA] [ENG>]	6.789E03
	[ALPHA] [ENG>]	0.006789E06
	[ALPHA] [<ENG] [ALPHA] [<ENG]	6789.E00
	[ALPHA] [<ENG]	6789000.E-03

9	[sin] [cos] [tan] [sin ⁻¹] [cos ⁻¹] [tan ⁻¹] [π] [hyp] [arc hyp] [ln] [log] [log ₁₀] [e ^x] [e ^{-x}] [10 ^x] [X ⁻¹] [X ²] [X ³] [y ^x] [√] [√] [√] [n!] [nPr] [nCr] [%] [abs]	
---	--	--

sin 60 [°] =	[ON/C] [2ndF] [SETUP] [0] [0] [sin] 60 [=]	$\frac{\sqrt{3}}{2}$
	[CHANGE]	0.866025403
cos $\frac{\pi}{4}$ [rad] =	[2ndF] [SETUP] [0] [1] [cos] [π] [a/b] 4 [=]	$\frac{\sqrt{2}}{2}$
	[CHANGE]	0.707106781
tan ⁻¹ 1 [g] =	[2ndF] [SETUP] [0] [2] [2ndF] [tan ⁻¹] 1 [=]	50.
	[2ndF] [SETUP] [0] [0]	
(cosh 1.5 + sinh 1.5) ² =	[ON/C] [(] [hyp] [cos] 1.5 [+] [hyp] [sin] 1.5 [)] [X ²] [=]	20.08553692
tanh ⁻¹ $\frac{5}{7} =$	[2ndF] [arc hyp] [tan] [(] 5 [÷] 7 [)] [=]	0.895879734
ln 20 =	[ln] 20 [=]	2.995732274
log 50 =	[log] 50 [=]	1.698970004
log ₂ 16384 =	[2ndF] [log ₂] 2 [▶] 16384 [=]	14.
LINE	[2ndF] [log ₂] 2 [(] [C-] 16384 [)] [=]	14.
e ³ =	[2ndF] [e ^x] 3 [=]	20.08553692
1 + e =	1 [÷] [ALPHA] [e] [=]	0.367879441
10 ^{1.7} =	[2ndF] [10 ^x] 1.7 [=]	50.11872336
$\frac{1}{6} + \frac{1}{7} =$	6 [2ndF] [X ⁻¹] [+] 7 [2ndF] [X ⁻¹] [=]	$\frac{13}{42}$
	[CHANGE]	0.309523809
8 ⁻² - 3 ⁴ × 5 ² =	8 [y ^x] [(-)] 2 [▶] - 3 [y ^x] 4 [▶] × 5 [X ²] [=]	-2024 $\frac{63}{64}$
	[CHANGE]	$\frac{129599}{64}$
	[CHANGE]	-2'024,984375

SHARP
SHARP CORPORATION

LINE
 $8 \times 2 = 16$
 $3 \times 4 = 12$
 $\sqrt{x^2} = x$
-2'024.984375
CHANGE -2024r63r64
CHANGE -129599r64

$8^3 = 512$
 $\sqrt{49 - 4\sqrt{81}} = 4$

LINE
 $\sqrt{49 - 4} = 4$
 $\sqrt[3]{27} = 3$
 $4! = 24$
 $10P_3 = 720$
 $5C_2 = 10$
 $500 \times 25\% = 125$
 $120 \div 400 = 30\%$
 $500 + (500 \times 25\%) = 625$
 $400 - (400 \times 30\%) = 280$
 $|5 - 9| = 4$

$\theta = \sin^{-1}x$	$\theta = \tan^{-1}x$	$\theta = \cos^{-1}x$
DEG	$-90 \leq \theta \leq 90$	$0 \leq \theta \leq 180$
RAD	$-\frac{\pi}{2} \leq \theta \leq \frac{\pi}{2}$	$0 \leq \theta \leq \pi$
GRAD	$-100 \leq \theta \leq 100$	$0 \leq \theta \leq 200$

10 $\int dx \quad \frac{d}{dx}$
 $\int_2^8 (x^2 - 5) dx = 89$
 $n = 100$
 $n = 10$
 $\frac{d(x^4 - 0.5x^3 + 6x^2)}{dx} = 4x^3 - 1.5x^2 + 12x$
 $x = 2, dx = 0.00002$

11 Σ
 $\sum_{x=1}^5 (x+2) = 15$
 $n = 1$
 $n = 2$

12 Π
 $\prod_{x=1}^5 (x+2) = 2520$
 $n = 1$
 $n = 2$

13 DRG
 $90^\circ \rightarrow [\text{rad}] = \frac{1}{2}\pi$
 $\rightarrow [g] = 100$
 $\rightarrow [^\circ] = 90$

14 ALPHA RCL STO M+ M- ANS D1 D2 D3
 $8 \times 2 \Rightarrow M = 16$
 $24 \div (8 \times 2) = 1\frac{1}{2}$
 $(8 \times 2) \times 5 = 80$

$0 \Rightarrow M = 0$
 $\$150 \times 3 \Rightarrow M_1 = 450$
 $+ \$250; M_1 + 250 \Rightarrow M_2 = 700$
 $-) M_2 \times 5\% = 35$
 $M = 665$
 $\frac{24}{4+6} = 2\frac{2}{5} \dots (A)$
 $3 \times (A) + 60 \div (A) = 32\frac{1}{5}$
 $\sinh^{-1} \rightarrow D1$
 $\sinh^{-1} 0.5 = 0.481211825$

15
 $6 + 4 = \text{ANS} = 10$
 $\text{ANS} + 5 = 15$
 $8 \times 2 = \text{ANS} = 16$
 $\text{ANS}^2 = 256$

16 a/b ab/c
 $3\frac{1}{2} + \frac{4}{3} = 4\frac{5}{6}$
 4.833333333
LINE
 $3 \div 4 = 0.75$
 4.833333333

17 BIN PEN OCT HEX DEC NEG NOT AND OR XOR XNOR
DEC (25) \rightarrow BIN = 11001
HEX (1AC) \rightarrow BIN = 110101100
 \rightarrow PEN = 3203
 \rightarrow OCT = 654
 \rightarrow DEC = 428
BIN (111) \rightarrow NEG = 1111111001
1011 AND 101 = 101
5A OR C3 = C3
NOT 10110 = 10110
24 XOR 4 = 4
B3 XNOR 2D = 2D
 \rightarrow DEC = -159

18 D'M'S \leftrightarrow DEG MATH (-sec, \rightarrow min)
 $7^\circ 31' 49.44'' \rightarrow [10] = 7.663$
 $123.678 \rightarrow [60] = 123^\circ 40' 40.8''$
3h 30m 45s + 6h 45m 36s = [60] = 10h 16' 21.
 $1234^\circ 56' 12'' + 0^\circ 34.567'' = [60] = 1234^\circ 56' 47.567''$

3h 45m - 1.69h = [60] = 2h 3' 36.
 $\sin 62^\circ 12' 24'' = [10] = 0.884635235$
 $24^\circ \rightarrow [^\circ] = 86' 40.0$
 $1500'' \rightarrow [^\circ] = 25$

19 \rightarrow FB \leftrightarrow XY (x,y) (x',y)
 $\begin{cases} x=6 \\ y=4 \end{cases} \rightarrow \begin{cases} r=7.211102551 \\ \theta=33.69006753 \end{cases}$
 $\begin{cases} r=14 \\ \theta=36^\circ \end{cases} \rightarrow \begin{cases} x=14 \cos 36^\circ = 11.32623792 \\ y=14 \sin 36^\circ = 8.228993532 \end{cases}$

20 CONST CONV
 $V_0 = 15.3 \text{ m/s}$
 $t = 10 \text{ s}$
 $V_0 t + \frac{1}{2} g t^2 = ? \text{ m} = 643.3325$
 $125 \text{ yd} = ? \text{ m} = 114.3$

21 MATH (ENG.SYMBOL)
 $100 \text{ m} \times 10 \text{ k} = ? = 1'000.$

22 MDF
 \rightarrow [FIX, TAB = 1] = 0.0
 $5 \div 9 = \text{ANS} = \frac{5}{9} = 0.6$
 $\text{ANS} \times 9 = 5$
 \rightarrow [MDF] = $\frac{3}{5}$
 $\text{ANS} \times 9 = 5.4$
 \rightarrow [NORM1] = 5.4

$5 \times 9 = 45 = 5.555555555 \times 10^{-1} \times 9$
 $2 \times 3 \times 9 = 36 = 0.6 \times 9$

23 int \div MATH (ipart, fpart, int, (%))
 $23 \div 5 = 4 \text{ R } 3$
 $9.5 \div 4 = 2 \text{ R } 1.5$
 $-32 \div (-5) = 6 \text{ R } -2$
 $42.195 \rightarrow [\text{ipart}] = 42$
 $\sqrt{2} \rightarrow [\text{fpart}] = 0.414213562$
 $-34.5 \rightarrow [\text{int}] = -35$
 $50 \times 8(\%) + 200 = 204$

24 P.FACT
 $12210 = 2 \times 3 \times 5 \times 11 \times 37$
 $1234567 = 1234567$
 $127 \times (9721)$

25 ALGB

$f(x) = x^3 - 3x^2 + 2$

$x = -1$ 2ndF ALGB (←) 1 ENTER -2.

$x = -0.5$ 2ndF ALGB (←) 0.5 ENTER $1\frac{1}{8}$

$\sqrt{A^2+B^2}$

A = 2, B = 3 2ndF ALGB 2 ENTER 3 ENTER $\sqrt{13}$

A = 2, B = 5 2ndF ALGB 2 ENTER 5 ENTER $\sqrt{29}$

26 SOLVER

$\sin x - 0.5$ ON/C sin ALPHA X - 0.5

Start = 0 2ndF SOLVER 0 ENTER ENTER 30.

Start = 180 ENTER 180 ENTER ENTER 150.

27 MODE (STAT) (INS-D)

DATA (MODE) 1 0

X	FRQ
20	1
30	
40	
40	2
50	5

2ndF (↑) 2ndF (DEL) (↓) (↓) ALPHA (INS-D)

DATA 30 40 40 45 45 60

X	FRQ
3	4.5
4	6.0
5	

28 MODE (STAT) (DATA) (STAT) (X') (Y')

DATA (MODE) 1 0 2ndF (CA) (DATA)

95 ENTER 80 (←) 2 ENTER 75 (←) 3 ENTER 50 ENTER

X	FRQ
3	7.5
4	5.0
5	

DATA Stat 0 [SD] 0.

$n = 7.$
 $\bar{x} = 75.7142857$
 $sx = 13.3630621$
 $\downarrow s^2x = 178.571429$

$\uparrow \sigma x = 12.3717915$
 $\sigma^2x = 153.061224$
 $\Sigma x = 530.$
 $\downarrow \Sigma x^2 = 41'200.$

$\uparrow x_{min} = 50.$
 $Q_1 = 75.$
 $Med = 75.$
 $\downarrow Q_3 = 80.$

$\uparrow x_{max} = 95.$

$(95 - \bar{x}) \times 10 + 50 = \frac{95 - 75.7142857}{13.3630621} \times 10 + 50 = 64.43210706$

DATA (MODE) 1 1 2 (←) 5 (←) 2 ENTER

12 (←) 24 ENTER 21 (←) 40 (←) 3 ENTER 15 (←) 25 ENTER

X	Y	FRQ
3	21	40
4	15	25
5		

DATA Stat 1[a+bx] 0.

$a + bx$
 $a = 1.050261097$
 $b = 1.826044386$
 $\downarrow r = 0.995176343$

ON/C ALPHA $\uparrow \Sigma x^4 = 654'836.$
 STAT 0 $y_{min} = 5.$
 (↓) (↓) $y_{max} = 40.$

$x = 3 \rightarrow y' = ?$ ON/C 3 2ndF (Y') 3y' 6.528394256

$y = 46 \rightarrow x' = ?$ 46 2ndF (X') 46x' 24.61590706

DATA (MODE) 1 2 12 (←) 41 ENTER

8 (←) 13 ENTER 5 (←) 2 ENTER 23 (←) 200 ENTER 15 (←) 71 ENTER

X	Y	FRQ
4	23	200
5	15	71
6		

DATA Stat 2[a+bx+cx^2] 0.

$a + bx + cx^2$
 $a = 5.357506761$
 $b = -3.120289663$
 $\downarrow c = 0.503334057$

$\uparrow a + bx + cx^2$
 $R^2 = 0.99994896$

$x = 10 \rightarrow y' = ?$ ON/C 10 2ndF (Y') 10y' 24.4880159

$y = 22 \rightarrow x' = ?$ 22 2ndF (X') 22x' 9.63201409
 2: -3.432772026

22 ALPHA (STAT) 22x'^2 -3.432772026

29

$\bar{x} = \frac{\Sigma x}{n}$ $\sigma x = \sqrt{\frac{\Sigma x^2 - n\bar{x}^2}{n}}$

$sx = \sqrt{\frac{\Sigma x^2 - n\bar{x}^2}{n-1}}$

$\bar{y} = \frac{\Sigma y}{n}$ $\sigma y = \sqrt{\frac{\Sigma y^2 - n\bar{y}^2}{n}}$

$sy = \sqrt{\frac{\Sigma y^2 - n\bar{y}^2}{n-1}}$

30 MATH (-t, P, Q, R)

$P(t) = \frac{1}{\sqrt{2\pi}} \int_{-\infty}^t e^{-\frac{x^2}{2}} dx$ ($t \geq 0$) ($t < 0$)

$Q(t) = \frac{1}{\sqrt{2\pi}} \int_0^t e^{-\frac{x^2}{2}} dx$ ($t \geq 0$) ($t < 0$)

$R(t) = \frac{1}{\sqrt{2\pi}} \int_t^{\infty} e^{-\frac{x^2}{2}} dx$ ($t \geq 0$) ($t < 0$)

DATA (MODE) 1 0 20 (←) 1 ENTER

30 (←) 3 ENTER 40 (←) 5 ENTER 50 (←) 8 ENTER 60 (←) 13 ENTER 70 (←) 10 ENTER 80 (←) 7 ENTER 90 (←) 3 ENTER

X	FRQ
20	1
30	3
40	5
50	8
60	13
70	10
80	7
90	3

DATA Stat 0[SD] 0.

$\bar{x} =$ ALPHA (STAT) 2 1 = $\bar{x} = 60.4$

$\sigma x =$ ALPHA (STAT) 2 4 = $\sigma x = 16.48757108$

$x = 35 \rightarrow P(t)?$ MATH 1 35 MATH 0 = 0.061713

$x = 75 \rightarrow Q(t)?$ MATH 2 75 MATH 0 = 0.312061

$x = 85 \rightarrow R(t)?$ MATH 3 85 MATH 0 = 0.067845

$t = 1.5 \rightarrow R(t)?$ MATH 3 1.5) = 0.066807

31 MODE (TABLE)

$x^2 + 1$ (MODE) 2 ALPHA X X^2 +

X_Start: -2 (←) 2 ENTER

X_Step: 1 1 ENTER

X	ANS
-2	5
-1	2
0	1

$x^2 + 1$ (MODE) 2 ALPHA X X^2 +

X_Start: 1 1 ENTER

X_Step: 1 1 ENTER

X	ANS1	ANS2
1	2	6
2	5	7
3	10	8

32 MODE (COMPLEX)

$(12 - 6i) + (7 + 15i) - (11 + 4i) = 8 + 5i$

$r_1 = 8, \theta_1 = 70^\circ$
 $r_2 = 12, \theta_2 = 25^\circ$
 $\rightarrow r = ?, \theta = ?$

$1 + i$ 2ndF (→rθ) 1 + i = $1.414213562 \angle 45.$

$\text{conj}(5 + 2i) = 5 - 2i$

$\text{arg}(2 + 3i) = 56.30993247$

$\text{real}(15 \angle 30) = 12.99038106$

$\text{img}(15 \angle 30) = 7.5$

33 (MODE) (2-VLE, 3-VLE, QUAD, CUBIC)

$2x + 3y = 4$	MODE 4 0	2 ENTER 3 ENTER 4 ENTER
$5x + 6y = 7$		5 ENTER 6 ENTER 7
$x = ?$	ENTER X:	-1.
$y = ?$	Y:	2.
$\det(D) = ?$	D:	-3.

$x + y - z = 9$	MODE 4 1	1 ENTER 1 ENTER (←) 1 ENTER 9 ENTER
$6x + 6y - z = 17$		6 ENTER 6 ENTER (←) 1 ENTER 17 ENTER
$14x - 7y + 2z = 42$		14 ENTER (←) 7 ENTER 2 ENTER 42
$x = ?$	ENTER X:	3.238095238
$y = ?$	Y:	-1.638095238
$z = ?$	Z:	-7.4
$\det(D) = ?$	D:	105.

$3x^2 + 4x - 95 = 0$	MODE 4 2	3 ENTER 4 ENTER (←) 95
$x = ?$	ENTER X =	↓
	1:	5.
	2:	-6.333333333
	ENTER X-Value:	↑
		-0.6666666666
	Ymin:	-96.333333333

$5x^3 + 4x^2 + 3x + 7 = 0$	MODE 4 3	5 ENTER 4 ENTER 3 ENTER 7
$x = ?$	ENTER X =	
	1:	-1.233600307
	2:	0.216800153
		±1.043018296i

$1 \ 2$	MODE 5	MATH 1 2 2 ENTER
$3 \ 4$		1 ENTER 2 ENTER 3 ENTER 4 ENTER
	ON/C (MATH) 3 0	
$3 \ 1$	MATH 1 ENTER	3 ENTER 1 ENTER 2 ENTER 6 ENTER
$2 \ 6$		ON/C (MATH) 3 1
$\text{matA} \times \text{matB} =$	ON/C (MATH) 0 0 0 X	7 13
	MATH 0 1 =	17 27
$\dim(\text{matA}, 3, 3) =$	ON/C (MATH) 7 (←) 3 (←) 3	1 2 0
	0 0 (←) 3 (←) 3	3 4 0
) =	0 0 0

5	MODE 6	MATH 1 2 ENTER
6		5 ENTER 6 ENTER
	ON/C (MATH) 3 0	
7	MATH 1 2 ENTER	7 ENTER 8 ENTER
8		ON/C (MATH) 3 1
$\text{vectA} + \text{vectB} =$	ON/C (MATH) 0 0 0 +	12
	MATH 0 1 =	14
$\text{DotPro}(\text{vectA}, \text{vectB}) =$	ON/C (MATH) 4 (MATH) 0	
	0 (←) 3 (←) 0 1	
) =	83.

34 (MODE) (MATRIX)

$1 \ 2$	MODE 5	MATH 1 2 2 ENTER
$3 \ 4$		1 ENTER 2 ENTER 3 ENTER 4 ENTER
	ON/C (MATH) 3 0	
$3 \ 1$	MATH 1 ENTER	3 ENTER 1 ENTER 2 ENTER 6 ENTER
$2 \ 6$		ON/C (MATH) 3 1
$\text{matA} \times \text{matB} =$	ON/C (MATH) 0 0 0 X	7 13
	MATH 0 1 =	17 27
$\dim(\text{matA}, 3, 3) =$	ON/C (MATH) 7 (←) 3 (←) 3	1 2 0
	0 0 (←) 3 (←) 3	3 4 0
) =	0 0 0

35 (MODE) (VECTOR)

5	MODE 6	MATH 1 2 ENTER
6		5 ENTER 6 ENTER
	ON/C (MATH) 3 0	
7	MATH 1 2 ENTER	7 ENTER 8 ENTER
8		ON/C (MATH) 3 1
$\text{vectA} + \text{vectB} =$	ON/C (MATH) 0 0 0 +	12
	MATH 0 1 =	14
$\text{DotPro}(\text{vectA}, \text{vectB}) =$	ON/C (MATH) 4 (MATH) 0	
	0 (←) 3 (←) 0 1	
) =	83.

36

Function Fonction Función	Dynamic range Plage dynamique Rango dinámico
$\sin x, \cos x, \tan x$	DEG: $ x < 10^{10}$ ($\tan x: x \neq 90(2n-1)^*$) RAD: $ x < \frac{\pi}{180} \times 10^{10}$ ($\tan x: x \neq \frac{\pi}{2}(2n-1)^*$) GRAD: $ x < \frac{10}{9} \times 10^{10}$ ($\tan x: x \neq 100(2n-1)^*$)
$\sin^{-1}x, \cos^{-1}x$	$ x \leq 1$
$\tan^{-1}x, \sqrt[3]{x}$	$ x < 10^{100}$
$\ln x, \log x, \log_a x$	$10^{-99} \leq x < 10^{100}, 10^{-99} \leq a < 10^{100} (a \neq 1)$
y^x	• $y > 0: -10^{100} < x \log y < 100$ • $y = 0: 0 < x < 10^{100}$ • $y < 0: x = n$ ($0 < x < 1: \frac{1}{x} = 2n-1, x \neq 0$)*, $-10^{100} < x \log y < 100$

$x\sqrt{y}$	• $y > 0: -10^{100} < \frac{1}{x} \log y < 100 (x \neq 0)$ • $y = 0: 0 < x < 10^{100}$ • $y < 0: x = 2n-1$ ($0 < x < 1: \frac{1}{x} = n, x \neq 0$)*, $-10^{100} < \frac{1}{x} \log y < 100$
e^x	$-10^{100} < x \leq 230.2585092$
10^x	$-10^{100} < x < 100$
$\sinh x, \cosh x, \tanh x$	$ x \leq 230.2585092$
$\sinh^{-1}x$	$ x < 10^{50}$
$\cosh^{-1}x$	$1 \leq x < 10^{50}$
$\tanh^{-1}x$	$ x < 1$
x^2	$ x < 10^{50}$
x^3	$ x < 2.15443469 \times 10^{33}$
\sqrt{x}	$0 \leq x < 10^{100}$
x^{-1}	$ x < 10^{100} (x \neq 0)$
$n!$	$0 \leq n \leq 69^*$
nPr	$0 \leq r \leq n \leq 9999999999^*$ $\frac{n!}{(n-r)!} < 10^{100}$
nCr	$0 \leq r \leq n \leq 9999999999^*$ $0 \leq r \leq 69$ $\frac{n!}{r!(n-r)!} < 10^{100}$
$\leftrightarrow \text{DEG}, \text{D}^\circ \text{M} \text{S}$	$0^\circ 0' 0.00001'' \leq x < 10000^\circ$
$x, y \rightarrow r, \theta$	$\sqrt{x^2 + y^2} < 10^{100}$
$r, \theta \rightarrow x, y$	$0 \leq r < 10^{100}$ DEG: $ \theta < 10^{10}$ RAD: $ \theta < \frac{\pi}{180} \times 10^{10}$ GRAD: $ \theta < \frac{10}{9} \times 10^{10}$
DRG▶	DEG → RAD, GRAD → DEG: $ x < 10^{100}$ RAD → GRAD: $ x < \frac{\pi}{2} \times 10^{98}$
$n\text{GCD}_n, n\text{LCM}_n$	$0 < n < 10^{10}^*$
$R.\text{Int}(m, n)$	$ m \leq 9999999999^*$ $ n \leq 9999999999^*$ $m < n, n - m < 10^{10}$
$(A + Bi) + (C + Di)$	$ A + C < 10^{100}, B + D < 10^{100}$
$(A + Bi) - (C + Di)$	$ A - C < 10^{100}, B - D < 10^{100}$
$(A + Bi) \times (C + Di)$	$(AC - BD) < 10^{100}$ $(AD + BC) < 10^{100}$
$(A + Bi) \div (C + Di)$	$\frac{AC + BD}{C^2 + D^2} < 10^{100}$ $\frac{BC - AD}{C^2 + D^2} < 10^{100}$ $C^2 + D^2 \neq 0$
→ DEC	DEC: $ x \leq 9999999999$
→ BIN	BIN: $1000000000 \leq x \leq 1111111111$ $0 \leq x \leq 1111111111$
→ PEN	PEN: $2222222223 \leq x \leq 4444444444$ $0 \leq x \leq 2222222222$
→ OCT	OCT: $4000000000 \leq x \leq 7777777777$ $0 \leq x \leq 3777777777$
→ HEX	HEX: $\text{FDABF41C01} \leq x \leq \text{FFFFFFFFFFFF}$ $0 \leq x \leq 2540\text{BE3FF}$
AND	
OR	
XOR	
XNOR	
NOT	BIN: $1000000000 \leq x \leq 1111111111$ $0 \leq x \leq 1111111111$ PEN: $2222222223 \leq x \leq 4444444444$ $0 \leq x \leq 2222222221$ OCT: $4000000000 \leq x \leq 7777777777$ $0 \leq x \leq 3777777777$ HEX: $\text{FDABF41C01} \leq x \leq \text{FFFFFFFFFFFF}$ $0 \leq x \leq 2540\text{BE3FE}$
NEG	BIN: $1000000001 \leq x \leq 1111111111$ $0 \leq x \leq 1111111111$ PEN: $2222222223 \leq x \leq 4444444444$ $0 \leq x \leq 2222222222$ OCT: $4000000001 \leq x \leq 7777777777$ $0 \leq x \leq 3777777777$ HEX: $\text{FDABF41C01} \leq x \leq \text{FFFFFFFFFFFF}$ $0 \leq x \leq 2540\text{BE3FF}$

Normal pdf	$0 < \sigma$
Normal cdf	
Inverse Normal	$0 < a < 1$ $0 < \sigma$
Binomial pdf	$0 < n$
Binomial cdf	$0 \leq p \leq 1$
Poisson pdf	$0 \leq x$ (integer / entier / entero)
Poisson cdf	$0 < \mu$

* m, n, r: integer / entier / entero