

**ENGLISH** 

SCIENTIFIC CALCULATOR

**EL-531TG** MODEL EL-531TH

## **OPERATION MANUAL**

Thank you for purchasing the SHARP Scientific Calculator Model EL-531TG/TH. After reading this manual, store it in a convenient location for future reference

- On the sheet with calculation examples is used english notation (with a decimal point).
- . This product uses a period as a decimal point.

- 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 nea 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.
  Do not drop it or apply excessive force.
- · Never dispose of batteries in a fire.
- · Keep batteries out of the reach of children.
- ${}^{\bullet}$  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:
- 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

Do not use an object with a breakable or sharp tip. Note that pressing the RESET switch erases all data stored in memory.

If service should be required on this calculator, use only a SHARP servicing dealer,

SHARP approved service facility, or SHARP repair service where available







- · During actual use, not all symbols are displayed at the same time.
- · Certain inactive symbols may appear visible when viewed from a far off angle.
- Only the symbols required for the usage currently being explained are shown in the display and calculation examples in this manual.

Appears when the entire equation cannot be displayed

Press <a>/> to see the remaining (hidden) section.</a> Indicates that data can be visible above/below the screen.

Press (A) / V to scroll up/down the view.

Appears when (200F) is pressed, indicating that the functions shown 2ndF

in same color are enabled.
Indicates that hype has been pressed and the hyperbolic functions HYP are enabled. If archyp are pressed, the symbols "2ndF HYP"

appear, indicating that inverse hyperbolic functions are enabled Indicates that ALPHA, STO or RCL has been pressed, and entry ALPHA (recall) of memory contents and recall of statistics can be performed.

FIX / SCI / ENG : Indicates the notation used to display a value.

DEG / RAD / GRAD : Indicates angular units and changes each time DRG is pressed.

STAT Appears when statistics mode is selected. Indicates that a value is stored in the independent memory.

## BEFORE USING THE CALCULATOR

## Key Notation Used in this Manual

.,			
ex F	To specify $e^x$ To specify In	:	$2$ ndF $e^x$
	To specify F	:	ALPHA F

• • Functions that are printed in orange above the key require 2ndF to be pressed first before the key. When you specify the memory, press  $\underbrace{\text{\tiny ALPHA}}$  first. Numbers for input value are not shown as keys, but as ordinary numbers.

## Power On and Off

Press (ON/C) to turn the calculator on, and (2ndF) (OFF) to turn it off

#### Clearing the Entry and Memories

Operation	(Display)	M <sup>*1</sup>	A - F, X, Y -	STAT VAR'S
ON/C	0	×	×	×
2ndF CA	0	×	0	0
2ndF M-CLR 0 0 *6	0	0	0	0
2ndF M-CLR 1 0 *7	0	0	0	0
RESET switch	0	0	0	0

F V V\*2

- O: Clear
- \*1 Independent memory M
- \*2 Temporary memory A F, X and Y
- \*3 Last answer memory
- \*4 Statistical data (entered data)
- \*5  $\overline{x}$ , sx,  $\sigma$ x, n,  $\Sigma$ x,  $\Sigma$ x<sup>2</sup>,  $\overline{y}$ , sy,  $\sigma$ y,  $\Sigma$ y,  $\Sigma$ y<sup>2</sup>,  $\Sigma$ xy, r, a, b, c. \*6 All variables are cleared. See 'About the Memory clear key' for details.
- \*7 This key combination functions the same as the RESET switch.
- See 'About the Memory clear key' for details.

#### Memory clear key

Press 2ndF McLR to display the menu.

- MEM RESET • To clear all variables (M, A – F, X, Y, ANS, STAT VAR), 0 press 0 0 or 0 ENT
- To RESET the calculator, press 1 0 or 1 ENT). The RESET operation will erase all data stored in memory, and restore the calculator's default setting.

#### Entering and Correcting the Equation

#### Cursor keys

- Press or to move the cursor. You can also return to the equation after getting an answer by pressing lacksquare ( ). See the next section for using the ▲ and ▼ keys.
- In the SET UP menu and other locations, use the or key to move the flashing cursor, then press ENT (= key). If you need to scroll up/down the view, use the 
  or 
  key.

- Insert mode and Overwrite mode in the Equation display
   Pressing @ndF INS switches between the two editing modes: insert mode (default); and overwrite mode. A triangular cursor indicates that an entry will be inserted at the cursor, while the rectangular cursor indicates to overwrite preexisting data as you make entries.
- To insert a number in the insert mode, move the cursor to the place immediately after where you wish to insert, then make a desired entry. In the overwrite mode, data under the cursor will be overwritten by the number you enter
- The mode set will be retained until the next RESET operation

• To delete a number/function, move the cursor to the number/function you wish to delete, then press DEL. If the cursor is located at the right end of an equation, the DEL key will function as a back space key.

#### Multi-line Playback function

This calculator is equipped with a function to recall previous equations in the normal mode. Equations also include calculation ending instructions such as "=" and a maximum of 142 characters can be stored in memory. When the memory is full, stored equations are deleted in the order of the oldest first. Pressing 
will display the previous equation and the answer. Further pressing 
will display preceding equations (after returning to the previous equation, press 🔻 to view equations in order). In addition, [2ndF]  $\blacktriangle$  can be used to jump to the oldest equation.

- To edit an equation after recalling it, press ► (
- To edit the displayed equation, press ( ) immediately after obtaining a calculation answer.
- The multi-line memory is cleared by the following operations: [274] [CA],
  [274] (including the Automatic Power Off feature), mode change, memory clear (2ndF McLR), RESET, 2ndF (MODM), ALPHA ((RCL)) (ANS), memory calculation, chain calculation, angle unit conversion, coordinate conversion, N-base conversion, numerical value storage to the temporary memories and independent memory, and input/deletion of statistical data.

## Priority Levels in Calculation

This calculator performs operations according to the following priority: ① Fractions (1r4, etc.) ② Functions preceded by their argument ( $x^{-1}$ ,  $x^2$ , n!, etc.) Up tractions (1r4, etc.)  $\oslash$  Functions preceded by their argument (x',  $x_r$ ,  $y_r$ 

· If parentheses are used, parenthesized calculations have precedence over any other calculations.

## INITIAL SET UP

## Mode Selection

Normal mode (NORMAL): MODE 0 (default)

Used to perform arithmetic operations and function calculations

Statistics mode (STAT): MODE 1

Used to perform statistical calculations

When executing mode selection, temporary memories, statistical variables, statistical data and last answer memory will be cleared even when reselecting the same mode.

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 (SET UP) to display the SET UP menu.



- A menu item can be selected by:
- moving the flashing cursor by using 

  , then pressing ENT (= key), or pressing the number key corresponding to the menu item number.
   If o r ▼ is displayed on the screen, press o r ▼ to view the previous/
- next menu screen
- Press ON/C to exit the SET UP menu.

# Selecting the Display Notation and Decimal Places

Four display notation systems are used to display calculation results: Floating point; Fixed decimal point; Scientific notation; and Engineering notation.

- When the FIX, SCI, or ENG symbol is displayed, the number of decimal places (TAB) can be set to any value between 0 and 9. Displayed values will be reduced to the corresponding number of digits.
- If a floating point number does not fit in the specified range, the calculator will display the result using the scientific notation (exponential notation) system. See 'Setting the Floating Point Numbers System in Scientific Notation' for details.

• Press SET UP, followed by 💿		. ,	•
-FIX SCI ENG	$\rightarrow$	^NORM1	NORM2

1 2 💌 3

#### Setting the Floating Point Numbers System in Scientific Notation Two settings are used to display a floating point number: NORM1 (default setting)

and NORM2. A number is automatically displayed in scientific notation outside a preset range:

100000÷3=		
[Floating point (NORM1)]	ON/C 100000 ÷ 3 =	33'333.33333
→[Fixed decimal point]	SET UP 0 0	33'333.33333
[TAB set to 2]	SET UP 1 2	33'333.33
→[SClentific notation]	SET UP 0 1	3.33×10 <sup>04</sup>
→[ENGineering notation]	SET UP 0 2	33.33×10 <sup>03</sup>
→[Floating point (NORM1)]	SET UP 0 3	33'333.33333
3÷100=		
[Floating point (NORM1)]	ON/C 100000 ÷ 3 =	0.003
→[Floating point (NORM2)]	SET UP 0 4	3.×10 <sup>-03</sup>
→[Floating point (NORM1)]	SET UP 0 3	0.003

#### Determination of the Angular Unit

In this calculator, the following three angular units (degrees, radians, and grads) can



#### SCIENTIFIC CALCULATIONS

- In each example, press (ONIC) to clear the display, If the FIX, SCI, or ENG indicator is displayed, clear the indicator by selecting 'NORM1' from the SET UP menu.

Arithmetic Operations	(2)
• The closing parenthesis ) just before  or M+ may be omitted.	

[4]

(6)

- Constant Calculations [3] In constant calculations, the addend becomes a constant. Subtraction and division are performed in the same manner. For multiplication, the multiplicand becomes a constant
- · In the constants calculations, constants will be displayed as K

#### **Functions**

· Refer to the calculation examples of each function.

#### · Before starting calculations, specify the angular unit Random Function

The Random function has four settings for use in the normal or statistics mode. (This function cannot be selected while using the N-Base function.) Press occ to exit.

• The generated pseudo-random number series is stored in memory Y. Each random number is based on a number series.

# Random Numbers

A pseudo-random number, with three significant digits from 0 up to 0.999, can be generated by pressing 2ndF (MOON) 0 ENT. To generate the next random number, press ENT

#### Random Dice To simulate a die-rolling, a random integer between 1 and 6 can be generated

by pressing 2ndF (MNDOW) 1 (ENT). To generate the next random number, press (ENT). Random Coin To simulate a coin flip, 0 (head) or 1 (tail) can be randomly generated by pressing

# 2ndF RADOM 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 4400M 3 ENT. To generate the next random integer number, press ENT.

Angular Unit Conversions Each time 2ndF) DRG are pressed, the angular unit changes in sequence.

# **Memory Calculations**

This calculator has 8 temporary memories (A - F, X and Y) one independent memory (M) and one last answer memory (ANS). The independent memory and temporary memories are only available in the normal mode.

Temporary memories (A - F, X and Y) Press STO and a variable key to store a value in memory.

Press RCL and a variable key to recall a value from the memory. To place a variable in an equation, press ALPHA and a variable key.

## Independent memory (M)

the ON/C key.

In addition to all the features of temporary memories, a value can be added to

or subtracted from an existing memory value.

Press ONIC STO M to clear the independent memory (M).

Last answer memory (ANS) The calculation result obtained by pressing 
or any other calculation ending instruction is automatically stored in the last answer memory.

· Calculation results from the functions indicated below are automatically stored in memories X or Y. For this reason, when using these functions, be careful with the use of memories X and Y.

 Random function ....... Y memory ... X memory (r or x), Y memory  $(\theta \text{ or } y)$ 

• Temporary memories and last answer memory are cleared even when the same mode is reselected.

#### $\bullet$ Use of ${\tiny{f RCL}}$ or ${\tiny{f APHA}}$ will recall the value stored in memory using up to 14 digits. Chain Calculations · This calculator allows the previous calculation result to be used in the following

calculation. The previous calculation result will not be recalled after entering multiple instructions. In the case of utilizing postfix functions (√, sin, etc.), you can perform a chain calculation even when the previous calculation result is cleared by the use of

# Fraction Calculations

Arithmetic operations and memory calculations can be performed using fractions, and conversion between a decimal number and a fraction.

If the number of digits to be displayed is greater than 10, the number is converted to and displayed as a decimal number

#### Binary, Pental, Octal, Decimal, and Hexadecimal Operations (N-Base) [9]

Conversions can be performed between N-base numbers. The four basic arithmetic operations, calculations with parentheses and memory calculations can also be performed, along with the logical operations AND, OR, NOT, NEG, XOR and XNOR on binary, pental, octal and hexadecimal numbers.

Conversion to ear	on system is periormed by the following keys:
2ndF (◆BIN):	Converts to the binary system. "b" appears.
2ndF ●PEN:	Converts to the pental syslem. "P" appears.
2ndF (◆OCT):	Converts to the octal syslem. "o" appears.
2ndF ●HEX:	Converts to the hexadecimal syslem. "H" appears.
2ndF ●DEC:	Converts to the decimal syslem. "b", "P", "o" and "H" disappear

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

Note: The hexadecimal numbers A – F are entered by pressing va, va, va, va, x3, log and lin and displayed as follows:

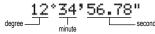
from the display

 $A \to f$ ,  $B \to b$ ,  $C \to f$ ,  $D \to d$ ,  $E \to f$ ,  $F \to F$ In the binary, pental, octal, and hexadecimal systems, fractional parts cannot be entered. When a decimal number having a fractional part is converted into a binary, pental, octal, or hexadecimal number, the fractional part will be truncated. Likewise, when the result of a binary, pental, octal, or hexadecimal calculation includes a fractional part, the fractional part will be truncated. In the binary, pental, octal, and hexadecimal systems, negative numbers are displayed as a complement.

## Time, Decimal and Sexagesimal Calculations

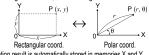
Conversion between decimal and sexagesimal numbers can be performed, and, while using sexagesimal numbers, conversion to seconds and minutes notation. The four basic arithmetic operations and memory calculations can be performed using the sexagesimal system.

Notation for sexagesimal is as follows



# Coordinate Conversions

• Before performing a calculation, select the angular unit.



 The calculation result is automatically stored in memories X and Y. Value of r or x: X memory Value of  $\theta$  or y: Y memory

#### [12] Modify Function

Calculation results are internally obtained in scientific notation with up to 14 digits for the mantissa. However, since calculation results are displayed in the form designated by the display notation and the number of decimal places indicated, the internal calculation result may differ from that shown in the display. By using the modify function. the internal value is converted to match that of the display, so that the displayed value can be used without change in subsequent operations.

## STATISTICAL CALCULATIONS

Press MODE 1 to select the statistics mode. The seven statistical calculations listed below can be performed. After selecting the statistics mode, select the desired sub-mode by pressing the number key corresponding to your choice.

To change statistical sub-mode, reselect statistics mode (press MODE 1), then select the required sub-mode.

0 (SD) 1 (LINE) : Single-variable statistics : Linear regression calculation : Quadratic regression calculation 2 (QUAD) 3 (EXP) 4 (LOG) : Exponential regression calculation : Logarithmic regression calculation 5 (PWR) 6 (INV) : Power regression calculation

: Inverse regression calculation The following statistics can be obtained for each statistical calculation:

# Single-variable statistical calculation

## Linear regression calculation

Statistics of 1 and 2 and, in addition, estimate of y for a given x (estimate y ) and estimate of x for a given y (estimate x )

# Exponential regression, Logarithmic regression, Power regression, and Inverse regression calculation Statistics of ① and ②. In addition, estimate of y for a given x and estimate of x for

a given y. (Since the calculator converts each formula into a linear regression formula before actual calculation takes place, it obtains all statistics, except coefficients a and b, from converted data rather than entered data.)

# Quadratic regression calculation

Statistics of ① and ② and coefficients a, b, c in the quadratic regression formula  $(y = a + bx + cx^2)$ . (For quadratic regression calculations, no correlation coefficient (r)can be obtained.) When there are two x' values, press 2ndF) +---When performing calculations using a, b and c, only one numeric value can be held.

Mean of camples (x data)

1	X	weari of samples (x data)
	SX	Sample standard deviation (x data)
(1) σx		Population standard deviation (x data)
U	n	Number of samples
	Σχ	Sum of samples (x data)
	$\Sigma x^2$	Sum of squares of samples (x data)
	<del>y</del>	Means of samples (y data)
	sy	Sample standard deviation (y data)
	σn	Population standard deviation (y data)
	Σy	Sum of samples (y data)
(2)	$\Sigma y^2$	Sum of squares of samples (y data)
	Σχγ	Sum of products of samples $(x, y)$
	r	Correlation coefficient
	а	Coefficient of regression equation
	b	Coefficient of regression equation
	c	Coefficient of quadratic regression equation

• Use (ALPHA) and (RCL) to perform a STAT variable calculation.

#### **Data Entry and Correction** [14]

Entered data are kept in memory until 2ndF CA or mode selection. Before entering new data, clear the memory contents.

# Data Entry

Data (DATA)

Data (To enter multiples of the same data)

x and v.)

Up to 100 data items can be entered. With the single-variable data, a data item without frequency assignment is counted as one data item, while an item assigned with frequency is stored as a set of two data items. With the two-variable data, a set of data items without frequency assignment is counted as two data items, while a set of items assigned with frequency is stored as a set of three data items.

#### **Data Correction**

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

Correction after pressing DATA:

Use to display the data previously entered.

Press v to display data items in ascending (oldest first) order.

To reverse the display order to descending (latest first), press the A key. Each item is displayed with 'Xn=', 'Yn=' or 'Nn=' (n is the sequential number

Display the data item to modify, input the correct value, then press (DATA) Using ((x)), you can correct the values of the data set all at once.

- 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

#### [15] Statistical Calculation Formulas

Туре	Regression formula
Linear	y = a + bx
Exponential	$y = a \cdot e^{bx}$
Logarithmic	$y = a + b \cdot \ln x$
Power	$y = a + x^b$
Inverse	$y = a + b \frac{1}{X}$
Quadratic	$y = a + bx + cx^2$

In the statistical calculation formulas, an error will occur when

- . The absolute value of the intermediate result or calculation result is equal to or greater than 1 × 10<sup>100</sup>.
- The denominator is zero.
- · An attempt is made to take the square root of a negative number
- No solution exists in the quadratic regression calculation.

#### ERROR AND CALCULATION RANGES

#### Errors

[11]

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) to clear the equation

#### **Error Codes and Error Types**

Syntax error (Error 1):

An attempt was made to perform an invalid operation.

Example: 2 2ndF →re

Calculation error (Error 2):

- The absolute value of an intermediate or final calculation result equals or exceeds 10<sup>100</sup>
- An attempt was made to divide by 0 (or an intermediate calculation resulted in zero).
- The calculation ranges were exceeded while performing calculations.

Depth error (Error 3):

- The available number of buffers was exceeded. There are 10 buffers\* for numeric values and 24 buffers for calculation instructions). \*5 buffers in STAT mode
- Data items exceeded 100 in the statistics mode.

Equation too long (Error 4)

The equation exceeded its maximum input buffer (142 characters). An equation must be shorter than 142 characters.

• Within the ranges specified, this calculator is accurate to ±1 of the least significant digit of the mantissa. However, a calculation error increases in continuous calculations due to accumulation of each calculation error. (This is the same for  $y^x$ ,  $x\sqrt{\ }$ , n!,  $e^x$ , ln 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.

±10-99 ~ ±9.999999999 × 1099 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.

# 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 Batteries

[EL-531TH] If the display has poor contrast, the batteries require replacement. [EL-531TG] If the display has poor contrast or nothing appears on the display even when ONC is pressed in dim lighting, it is time to replace the batteries.

## 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 leaking batteries, remove them and store in a safe place.
- Do not leave exhausted batteries 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.
- 2. Remove the screws. (Fig. 1)
- 3. Lift the battery cover to remove
- 4. Remove the used battery by prying it out with a ball-point pen or other similar pointed device. (Fig. 2)
- 5. [EL-531TG] Install one new battery. Make sure the "+" side is facing up. [EL-531TH] Install one new battery. First insert the "-" side toward the spring. (Fig. 3)
- 6. Replace the cover and screws
- 7. Press the RESET switch with the tip of a ball-point pen or similar object.
- 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.



#### **Automatic Power Off Function**

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

#### **SPECIFICATIONS**

Calculations: Scientific calculations, statistical calculations, etc. Internal calculations: Mantissas of up to 14 digits

Pending operations: 24 calculations, 10 numeric values (5 numeric values in STAT mode)

[EL-531TG] Built-in solar cells Napájení

1,5V --- (DC): Alkaline batterie (LR44 or equivalent) × 1 [EL-531TH] 1,5V --- (DC): Heavy duty manganese battery

(size AAA or R03) × 1

[EL-531TG] Approx. 5 000 hours when continuously displaying Operating time: 55555 at 25°C (77°F)

[EL-531TH] Approx. 17 000 hours when continuously displaying

55555 at 25°C (77°F) (varies according to use and other factors)

Operating temperature: 0°C - 40°C (32°F - 104°F)

80 mm × 161 mm × 15 mm Dimensions:

[EL-531TG] Approx. 110 g (with batteries) Weight: [EL-531TH] Approx. 115 a (with batteries)

Battery × 1 (installed), operation manual and hard case Accessories

## FOR MORE INFORMATION ABOUT SHARP CALCULATORS VISIT:

http://www.sharp-calculators.com

# **CALCULATION EXAMPLES** [1] 🔺 🔻 ONC 3 5 + 2 ) = 3 × 5 + 2 = 3 × 5 + 3 × 2 = 200 • 1)3(5+2)= $\begin{array}{l} \text{()} 3(5+2) = \\ \text{(2)} 3\times 5 + 2 = \\ \text{(3)} 3\times 5 + 3\times 2 = \\ \rightarrow \text{(1)} \\ \rightarrow \text{(2)} \\ \rightarrow \text{(3)} \\ \rightarrow \text{(2)} \end{array}$ 21. 21. 21. 21. 21. 17.

45+285+3=	ON/C 45 + 285 ÷ 3 =	140.
$\frac{18+6}{15-8}$ =	( 18 + 6 ) ÷ ( 15 - 8 =	3.428571429
42×(-5)+120=	42 × +/- 5 + 120 = *1 (5 +/-) *1	-90.
(5×10³)÷(4×10⁻³)=	5 Exp 3 ÷ 4 Exp +/- 3 =	1'250'000.
[3]		
34 <u>+57</u> = 45 <u>+57</u> =	34 + 57 = 45 =	91. 102.
34 <u>+57</u> =		
34 <u>+57</u> = 45 <u>+57</u> = 79 <u>-59</u> =	45 = 79 - 59 =	102.

[4] sin cos   In log   % n!	$\begin{array}{c} \text{tan}  \text{sin}^{-1}  \text{cos}^{-1}  \text{tan}^{-1}  \pi  \text{DRC} \\ e^x  \text{10}^x  X^{-1}  X^2  X^3  \sqrt{} \\ \text{nPr}  \text{nCr}  \% \end{array}$	hyp (arc hyp)
sin60[°]=	ON/C sin 60 =	0.866025403
$\cos \frac{\pi}{4} [rad] =$	DRG cos (π ÷ 4	0.707106781
tan-11=[g]	DRG	50.
(cosh 1.5 + sinh 1.5) <sup>2</sup> =	$\begin{array}{c} \text{ON/C} & \text{( hyp cos 1.5 + hyp)} \\ \text{sin 1.5 )} & x^2 = \end{array}$	20.08553692
$tanh^{-1}\frac{5}{7} =$	2ndF) archyp) tan ( 5 ÷ 7 ) =	0.895879734
In 20 =	in 20 =	2.995732274
log 50 =	log 50 =	1.698970004
e <sup>3</sup> =	2ndF) (e <sup>x</sup> ) 3 =	20.08553692
10 <sup>1.7</sup> =	2ndF (10 <sup>x</sup> ) 1.7 =	50.11872336
$\frac{1}{6} + \frac{1}{7} =$	6 (2ndF) (X <sup>-1</sup> ) + 7 (2ndF) (X <sup>-1</sup> ) =	0.309523809
$8^{-2} - 3^4 \times 5^2 =$	8 <u>yx</u> +/- 2 <u>- 3 yx</u> 4 × 5 <u>x² =</u>	-2'024.984375
$(12^3)^{\frac{1}{4}}$ =	12 $y^{x}$ 3 $y^{x}$ 4 $2ndF(x^{-1}) =$	6.447419591
83 =	8 (X3) =	512.
$\sqrt{49} - 4\sqrt{81} =$	49 — 4 (2ndF) × 81 =	4.
3√27 =	2ndF ₹ 27 =	3.
4! =	4 (2ndF) n! =	24.
<sub>10</sub> P <sub>3</sub> =	10 (2ndF) (nPr) 3 =	720.
<sub>5</sub> C <sub>2</sub> =	5 2ndF nCr 2 =	10.
500×25%=	500 × 25 (2ndF) %	125.
120÷400=?%	120 ÷ 400 2ndF %	30.
500+(500×25%)=	500 + 25 (2ndF) %	625.
400-(400×30%)=	400 - 30 (2ndF) %	280.

# The range of the results of inverse trigonometric functions

····g- · · · · · · · · · · · · · ·		
	$\theta = \sin^{-1} x,  \theta = \tan^{-1} x$	$\theta = \cos^{-1} x$
DEG	-90 ≤ θ ≤ 90	$0 \le \theta \le 180$
RAD	$-\frac{\pi}{2} \le \theta \le \frac{\pi}{2}$	$0 \leq \theta \leq \pi$
GRAD	−100 ≤ θ ≤ 100	$0 \le \theta \le 200$

# [5] DRG>

$90^{\circ} \rightarrow [rad]$ $\rightarrow [g]$ $\rightarrow [^{\circ}]$	ON/O 90 2ndF DRGIN 2ndF DRGIN 2ndF DRGIN	1.570796327 100. 90.
$\sin^{-1}0.8 = [^{\circ}]$ $\rightarrow [rad]$ $\rightarrow [g]$ $\rightarrow [^{\circ}]$	2ndF (sin-1) 0.8 = (2ndF (DRG)*) (2ndF (DRG)*) (2ndF (DRG)*)	53.13010235 0.927295218 59.03344706 53.13010235

# [6] (ALPHA) (RCL) (STO) (M+) (M-) (ANS)

TO) A		56.
3		68.
	+	
× 4	-	300.
_ 2 (S	то м	16.
PHA M	=	1.5
× 5	=	80.
М		0.
M+		450.
		250.
$\times$	5 (2ndF) (%)	35.
RCL	М	665.
Υ		110.
RCL	Y =	241.
RCL (	Y =	302'500.
)		3.
Y)(	X2 =	28.27433388
4 (	+ 6 )	
		2.4
A) (ANS	+ 60 ÷	
=		32.2

# [7]

6+4=ANS	ON/C 6 + 4 =	10.
ANS+5	+ 5 =	15.
8×2=ANS	8 × 2 =	16.
ANS <sup>2</sup>	x <sup>2</sup> =	256.
44+37=ANS √ANS=	44 + 37 =	81. 9.

# [8] $a^{b/c}$ d/c

4 <sub>Г</sub> 5 <sub>Г</sub> 6 4.833333333 29 <sub>Г</sub> 6	ON/C 3 $a^{b_C}$ 1 $a^{b_C}$ 2 + 4 $a^{b_C}$ 3 = $a^{b_C}$ dc	$3\frac{1}{2} + \frac{4}{3} = [a\frac{b}{c}]$ $\rightarrow [a.xxx]$ $\rightarrow [d/c]$
4.641588834	(2ndF) (10 <sup>x</sup> ) 2 (a <sup>b</sup> / <sub>c</sub> ) 3	$10^{\frac{2}{3}} =$
16807 <sub>Г</sub> 3125	7 (ab/c) 5 (yx 5 =	$(\frac{7}{5})^5 =$
1 - 2	1 (ab/c) 8 (yx) 1 (ab/c) 3	$(\frac{1}{8})^{\frac{1}{3}} =$
8 ┌ 15	√ 64 (a <sup>5</sup> /c) 225 =	$\sqrt{\frac{64}{225}} =$
8	( 2 y <sup>x</sup> 3 ) a <sup>b</sup> 6 ( 3 y <sup>x</sup> 4 ) =	$\frac{2^3}{3^4} =$
12 ┌ 23	1.2 a½ 2.3 =	1.2 2.3 =
0°31'1.5"	1 (D'M'S) 2 (D'M'S) 3 (a <sup>b</sup> / <sub>c</sub> ) 2 =	1°2'3" =
1	1 (Exp) 3 (a½) 2 (Exp) 3 (=	$\frac{1\times10^3}{2\times10^3}$ =
7.	ON/C 7 STO A	A = 7
4 ┌ 7	4 (ab/c) (ALPHA) (A) (=	$\frac{4}{A}$ =
1.65 1 <sub>Г</sub> 13 <sub>Г</sub> 20	1.25 + 2 (ab/c) 5 = (ab/c)	$1.25 + \frac{2}{5} = [a.xxx]$ $\rightarrow [a\frac{b}{c}]$
1.65 1 <sub> </sub> 13 <sub> </sub> 20 33 <sub> </sub> 20 1.65	ONC 1.65 =	1.65 $\rightarrow [a_c^b]$ $\rightarrow [d/c]$ $\rightarrow [a.xxx]$
		* 4 r 5 r 6=4 5

[9] -BIN -PEN -OCT -HEX -DEC NEG NOT AND	OR
XOR XNOR	

DEC(25)→BIN	ON/C 2ndF →DEC 25 (2ndF) →BIN	11001 b
HEX(1AC) →BIN →PEN →OCT →DEC	2ndF) ⊕HEX 1AC 2ndF) ⊕BN 2ndF) ⊕PRN 2ndF) ⊕CCT 2ndF) ⊕DEC	110101100 <sup>b</sup> 3203 <sup>P</sup> 654 <sup>0</sup> 428.
BIN(1010-100) ×11 =	2ndF ●BIN ( 1010 - 100 ( × 11 =	10010 b
BIN(111)→NEG	NEG 111 =	11111111001 b
HEX(1FF)+ OCT(512)= HEX(?)	2ndF ● HEX 1FF (2ndF) ● OCT + 512 = 2ndF) ● HEX	1511 <sup>0</sup> 349 <sup>H</sup>
2FEC- 2C9E=(A) +)2000- 1901=(B)	ON/C STO M (2ndF) ◆HEX 2FEC 2C9E M+ 2000 — 1901 M+	34E H
(C)	RCL M	A4d H
1011 AND 101 = (BIN)	(ON/C)(2ndF)(*BIN) 1011 (AND) 101 =	<b>1</b> b
5A OR C3 = (HEX)	2ndF ►HEX 5A OR C3 =	db <sup>H</sup>
NOT 10110 = (BIN)	(2ndF) ●BIN NOT 10110 =	1111101001 b
24 XOR 4 = (OCT)	(2ndF) → OCT) 24 (XOR) 4 =	<b>20</b> <sup>0</sup>
B3 XNOR 2D = (HEX) →DEC	2ndF ←HEX B3 XNOR 2D = 2ndF ←DEC	FFFFFFF61 <sup>H</sup> –159.

# [10] (D°M'S) ↔ DEG

12°39'18.05" → [10]	ON/C 12 (DWS) 39 (DWS) 18.05 (2ndF) (++DEG)	12.65501389
123.678 → [60]	123.678 (2ndF) (++DEG)	123°40'40.8"
3h30m45s + 6h45m36s = [60]	3 (DWS) 30 (DWS) 45 + 6 (D) 45 (DWS) 36 =	™S 10°16'21"
1234°56'12" + 0°0'34.567" = [60]	1234 (DWS) 56 (DWS) 12 + 0 (DWS) 0 (DWS) 34.567 =	1234°56'47"
3h45m - 1.69h = [60]	3 (DMS) 45 - 1.69 = (2ndF) (++DEG)	2°3'36"
sin62°12'24" = [10]	sin 62 (DTM'S) 12 (DTM'S) 24	0.884635235

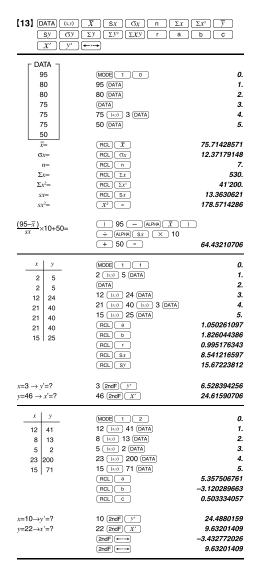
# [11] $\rightarrow r\theta$ $\rightarrow xy$ , $\leftarrow \rightarrow$

$ \begin{pmatrix} x = 6 \\ y = 4 \end{pmatrix}                                $	ONC 6 $[2ndF]$ , 4 $[2ndF]$ $\rightarrow r\theta$ $[r]$ $[2ndF]$ $\leftarrow \rightarrow [\theta]$ $[2ndF]$ $\leftarrow \rightarrow [r]$	7.211102551 33.69006753 7.211102551
$\begin{pmatrix} r = 14 \\ \theta = 36[^{\circ}] \end{pmatrix} \begin{pmatrix} x = \\ y = \\ \end{pmatrix}$	14 $(2ndF)$ $\rightarrow 36$ $(2ndF)$ $\rightarrow xy$ $[x]$ $(2ndF)$ $\leftarrow \rightarrow [y]$ $(2ndF)$ $\leftarrow \rightarrow [x]$	11.32623792 8.228993532 11.32623792

# [12] MDF SET UP

5÷9=ANS	ON/C   SET UP   0   0   SET UP   1   1	
ANS×9=	5 ÷ 9 =	0.6
[FIX,TAB=1]	× 9 = *1	5.0
	5 ÷ 9 = 2ndF MDF	0.6
	× 9 = *2	5.4
	SET UP 0 3	

<sup>\*1 5.555555555555555510&</sup>lt;sup>-1</sup>×9
\*2 0.6×9



# [14] DATA ▲ ▼

DATA 30 40 40	MODE 1 0 30 DATA 40 (:.y) 2 DATA 50 DATA	0. 1. 2. 3.
50	_	
┌ DATA ┐		
30		
45	45 (x,y) 3 DATA	X2 = 45.
45	•	N2 = 3.
45		
60	▼ 60 (DATA)	X3 = 60.

## [15]

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

$$Sx = \sqrt{\frac{\sum x^2 - n\bar{x}^2}{n-1}} \qquad \Sigma x = x_1 + x_2 + \dots + x_n$$

$$\Sigma x^2 = x_1^2 + x_2^2 + \dots + x_n^2$$

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

$$\sum xy = x_1y_1 + x_2y_2 + \dots + x_ny_n$$

$$\sum y = \sqrt{\frac{\sum y^2 - n\bar{y}^2}{n-1}} \qquad \sum y = y_1 + y_2 + \dots + y_n$$

$$\sum y^2 = y_1^2 + y_2^2 + \dots + y_n^2$$

# [16]

$ \begin{array}{ c c c } \hline {\bf Function} & {\bf Dpg i} &   x  < 10^{10} &   (lan x :  x  = 90 (2n-1))^* \\ \hline {\bf sin } x, \cos x, \\ {\bf tan } x &   x  < \frac{1}{8} \times 10^{10} &   (lan x :  x  = \frac{1}{2} \times 10^{10})^* \\ \hline {\bf GRAD:} &   x  < \frac{1}{9} \times 10^{10} &   (lan x :  x  = \frac{1}{2} \times 10^{10})^* \\ \hline {\bf sin } x, \cos x^* &   x  \le 1 \\ \hline {\bf sin } x^* / x &   x  \le 1 \\ \hline {\bf 1an } x^* / x &   x  < 10^{100} \\ \hline {\bf y}^x &   x  < 10^{100} &   x > x > x > x > x > x \\ \hline {\bf y}^x &   x  < 10^{100} &   x > x > x > x > x > x > x > x > x > x$
$\begin{array}{c} \sin x, \cos x, \\ \tan x \\ \tan x \\ \tan x \\ \end{array} \begin{array}{c} (\tan x :   x   = 90 (2n-1))^* \\ - (180 \times 10)^* \\ \end{array} \\ \begin{array}{c} \sin^{-1}x, \cos^{-1}x \\ \end{array} \begin{array}{c}  x  \le 1 \\ - (100 \times 10)^* \\ \end{array} \\ \begin{array}{c} \sin^{-1}x, \cos^{-1}x \\ \end{array} \begin{array}{c}  x  \le 1 \\ - (100 \times 10)^* \\ \end{array} \\ \begin{array}{c} \sin^{-1}x, \cos^{-1}x \\ \end{array} \begin{array}{c}  x  \le 1 \\ \end{array} \\ \begin{array}{c}  x  \le 1 \\ - (100 \times 10)^* \\ \end{array} \\ \begin{array}{c} \sin^{-1}x, \cos^{-1}x \\ \end{array} \begin{array}{c}  x  \le 1 \\ \end{array} \\ \begin{array}{c}  x  \le 1 \\ \end{array} \\ \begin{array}{c} \sin^{-1}x, \cos^{-1}x \\ \end{array} \begin{array}{c}  x  \le 1 \\ \end{array} \\ \begin{array}{c}  x  \le 1 \\ \end{array} \\ \begin{array}{c} \cos^{-1}x \\ - (10)^{100} < x < 1000 \\ \end{array} \\ \begin{array}{c} yx \\ \end{array} \\ \begin{array}{c} (0 <  x  < 1; \frac{1}{x} = 2n - 1, x \neq 0)^*, \\ - (10)^{100} < x \le 1000 \\ \end{array} \\ \begin{array}{c} (0 <  x  < 1; \frac{1}{x} = n, x \neq 0)^*, \\ - (10)^{100} < x \le 20 \cdot 2885092 \\ \end{array} \\ \begin{array}{c} 10^x \\ \end{array} \\ \begin{array}{c} -10^{100} < x \le 20 \cdot 2885092 \\ \end{array} \\ \begin{array}{c} 10^x \\ \end{array} \\ \begin{array}{c} -10^{100} < x \le 20 \cdot 2885092 \\ \end{array} \\ \begin{array}{c} 10^x \\ \end{array} \\ \begin{array}{c} -10^{100} < x \le 20 \cdot 2885092 \\ \end{array} \\ \begin{array}{c} 10^x \\ \end{array} \\ \begin{array}{c} -10^{100} < x \le 20 \cdot 2885092 \\ \end{array} \\ \begin{array}{c} 10^x \\ \end{array} \\ \begin{array}{c} -10^{100} < x \le 20 \cdot 2885092 \\ \end{array} \\ \begin{array}{c} 10^x \\ \end{array} \\ \begin{array}{c} -10^{100} < x \le 1000 \\ \end{array} \\ \begin{array}{c} -10^{100} < x \le 1000 \\ \end{array} \\ \begin{array}{c} -10^{100} < x \le 1000 \\ \end{array} \\ \begin{array}{c} x^3 \\ \end{array} \\ \begin{array}{c}  x  < 10^{100} \\ \end{array} \\ \begin{array}{c} x^3 \\ \end{array} \\ \begin{array}{c}  x  < 10^{100} \\ \end{array} \\ \begin{array}{c} x^3 \\ \end{array} \\ \begin{array}{c}  x  < 10^{100} \\ \end{array} \\ \begin{array}{c} x^3 \\ \end{array} \\ \begin{array}{c}  x  < 10^{100} \\ \end{array} \\ \begin{array}{c} x^3 \\ \end{array} \\ \begin{array}{c}  x  < 10^{100} \\ \end{array} \\ \begin{array}{c} x^3 \\ \end{array} \\ \begin{array}{c}  x  < 10^{100} \\ \end{array} \\ \begin{array}{c} x^3 \\ \end{array} \\ \begin{array}{c}  x  < 10^{100} \\ \end{array} \\ \begin{array}{c} x^3 \\ \end{array} \\ \begin{array}{c}  x  < 10^{100} \\ \end{array} \\ \begin{array}{c} x^3 \\ \end{array} \\ \begin{array}{c}  x  < 10^{100} \\ \end{array} \\ \begin{array}{c} x^3 \\ \end{array} \\ \begin{array}{c}  x  < 10^{100} \\ \end{array} \\ \begin{array}{c} x^3 \\ \end{array} \\ \begin{array}{c}  x  < 10^{100} \\ \end{array} \\ \begin{array}{c} x^3 \\ \end{array} \\ \begin{array}{c}  x  < 10^{100} \\ \end{array} \\ \begin{array}{c} x^3 \\ \end{array} \\ \begin{array}{c}  x  < 10^{100} \\ \end{array} \\ \begin{array}{c} x^3 \\ \end{array} \\ \begin{array}{c}  x  < 10^{100} \\ \end{array} \\ \begin{array}{c} x^3 \\ \end{array} \\ \begin{array}{c}  x  < 10^{100} \\ \end{array} \\ \begin{array}{c} x^3 \\ \end{array} \\ \begin{array}{c}  x  < 10^{100} \\ \end{array} \\ \begin{array}{c}  x  < 10^{10} \\ \end{array} \\ \begin{array}$
$\begin{array}{llllllllllllllllllllllllllllllllllll$
$ x  \le 1000   x    x  \le 1$ $ x  \le 1$ $ x  < 10^{100}   x    x$
$ x  \le 1000   x    x  \le 1$ $ x  \le 1$ $ x  < 10^{100}   x    x$
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
$\begin{array}{c} \ln x_i \log x & 10^{-90} \le x < 10^{100} \\ y^x & \begin{array}{c} \cdot y > 0: & -10^{100} < x \log y < 100 \\ \cdot y = 0: & 0 < x < 10^{100} \\ \cdot y = 0: & 0 < x < 10^{100} \\ \cdot y = 0: & 0 < x < 10^{100} \\ \cdot y = 0: & 0 < x < 10^{100} \\ \cdot y = 0: & 0 < x < 10^{100} \\ \cdot y = 0: & 0 < x < 10^{100} \\ \cdot y < 0: & x = 20 - 1 \\ (0 <  x  < 1: \frac{1}{x} = n, x \neq 0)^x, \\ -10^{100} < x \le 230.2585092 \\ 10^x & -10^{100} < x < 100 \\ \hline \\ \sin x_i, \cosh x_i \\ \tan x &  x  < 10^{100} \\ \hline \\ \sinh^{-1} x &  x  < 10^{100} \\ \hline \\ \cosh^{-1} x &  x  < 10^{100} \\ \hline \\ \cosh^{-1} x &  x  < 10^{100} \\ \hline \\ \cosh^{-1} x &  x  < 10^{100} \\ \hline \\ \cosh^{-1} x &  x  < 10^{100} \\ \hline \\ \cosh^{-1} x &  x  < 10^{100} \\ \hline \\ \cosh^{-1} x &  x  < 10^{100} \\ \hline \\ \cosh^{-1} x &  x  < 10^{100} \\ \hline \\ \cosh^{-1} x &  x  < 10^{100} \\ \hline \\ \cosh^{-1} x &  x  < 10^{100} \\ \hline \\ \cosh^{-1} x &  x  < 10^{100} \\ \hline \\ \cosh^{-1} x &  x  < 10^{100} \\ \hline \\ \cosh^{-1} x &  x  < 10^{100} \\ \hline \\ \cosh^{-1} x &  x  < 10^{100} \\ \hline \\ \cosh^{-1} x &  x  < 10^{100} \\ \hline \\ h^2 &  x  < 10^{10$
$y^{X} = \begin{cases} y > 0: & -10^{100} < x \log y < 100 \\ y = 0: & 0 < x < 10^{100} \\ y = 0: & 0 < x < 10^{100} \end{cases}$ $y > 0: & x = 1 \\ (0 <  x  < 1: \frac{1}{12} = 2n - 1, x \neq 0)^{*}, \\ -10^{100} < x \log  y  < 100 (x \neq 0) \end{cases}$ $y > 0: & x < 20^{10}  y  < 100 (x \neq 0)$ $y = 0: & 0 < x < 10^{100} \\ y = 0: & 0 < x < 10^{100} \\ y = 0: & 0 < x < 10^{100} \end{cases}$ $y < 0: & x = 2n - 1 \\ (0 <  x  < 1: \frac{1}{x} = n, x \neq 0)^{*}, \\ -10^{100} < x < 100 \end{cases}$ $e^{X} = -10^{100} < x < 100$ $\sinh_{x} \cos h x, \\ \tanh x =  x  < 10^{100}$ $\cosh^{-1} x =  x  < 10^{100}$ $\cosh^{-1} x =  x  < 10^{100}$ $\cosh^{-1} x =  x  < 10^{100}$ $x^{3} =  x  < 2.15443469 \times 10^{23}$ $\sqrt{x} = 0 \le x < 10^{100}$ $x^{-1} =  x  < 10^{100} (x \neq 0)$ $n! = 0 \le n \le 69^{*}$ $nPr = 0 \le r \le n \le 999999999^{*}$ $0 \le r \le n \le 999999999^{*}$ $0 \le r \le 69$ $\frac{n!}{(n+r)!} < 10^{100}$ $x, y \to r, \theta = \sqrt{x^{2} + y^{2}} < 10^{100}$ $x, y \to r, \theta = \sqrt{x^{2} + y^{2}} < 10^{100}$ $PEG \Rightarrow ADD =  \theta  < \frac{10}{9} \times 10^{10}$ $PBN \Rightarrow DEG \Rightarrow ADD =  \theta  < \frac{10}{9} \times 10^{10}$ $PBN \Rightarrow DEG \Rightarrow BIN = 100000000 \le x \le 1111111111$ $0 \le x \le 222222223 \le x \le 44444444444$ $0 \le x \le 222222223 \le x \le 44444444444$ $0 \le x \le 2222222223 \le x \le 44444444444$ $0 \le x \le 22222222223 \le x \le 44444444444$ $0 \le x \le 22222222223 \le x \le 44444444444$ $0 \le x \le 22222222223 \le x \le 44444444444$ $0 \le x \le 22222222223 \le x \le 44444444444$ $0 \le x \le 22222222223 \le x \le 44444444444$ $0 \le x \le 22222222223 \le x \le 44444444444$ $0 \le x \le 22222222223 \le x \le 44444444444$ $0 \le x \le 2222222223 \le x \le 44444444444$ $0 \le x \le 22222222223 \le x \le 44444444444$ $0 \le x \le 22222222223 \le x \le 44444444444$ $0 \le x \le 22222222223 \le x \le 44444444444$ $0 \le x \le 2222222223 \le x \le 44444444444$ $0 \le x \le 2222222223 \le x \le 444444444444$ $0 \le x \le 2222222223 \le x \le 444444444444$ $0 \le x \le 222222223 \le x \le 4444444444444$ $0 \le x \le 2222222223 \le x \le 444444444444444$ $0 \le x \le 222222223 \le x \le 4444444444444$ $0 \le x \le 222222233 \le x \le 44444444444444$ $0 \le x \le 22222233 \le x \le 44444444444444$ $0 \le x \le 22222233 \le x \le 4444444444444$ $0 \le x \le 22222233 \le x \le 4444444444444$ $0 \le x \le 2222233 \le x \le 4444444444444$ $0 \le x \le 2222233 \le x \le 444444444444444444$
$\begin{array}{c} y^X \\ \bullet y = 0:  0 < x < 10^{100} \\ \bullet y < 0:  x = n \\ (0 <  x  < 1: \frac{1}{\pi} = 2n - 1, x \neq 0)^*, \\ -10^{100} < x \log  y  < 100 \\ \bullet y < 0:  -10^{100} < \frac{1}{\pi} \log y < 100 (x \neq 0) \\ \bullet y = 0:  0 < x < 10^{100} \\ \bullet y < 0:  x = 2n - 1 \\ (0 <  x  < 1: \frac{1}{\pi} = n, x \neq 0)^*, \\ -10^{100} < \frac{1}{\pi} \log  y  < 100 \\ \bullet y < 0:  x = 2n - 1 \\ (0 <  x  < 1: \frac{1}{\pi} = n, x \neq 0)^*, \\ -10^{100} < x < 200.2585092 \\ \hline \\ 10^X \qquad -10^{100} < x < 100 \\ \hline \\ sinh x, cosh x, \\ tanh x \qquad  x  < 10^{20} \\ \hline \\ cosh^{-1} x \qquad  x  < 10^{20} \\ \hline \\ cosh^{-1} x \qquad  x  < 10^{20} \\ \hline \\ tanh^{-1} x \qquad  x  < 10^{20} \\ \hline \\ x^3 \qquad  x  < 2.15443469 \times 10^{33} \\ \hline \\ \sqrt{x} \qquad 0 \le x < 10^{100} \\ \hline \\ x^{-1} \qquad  x  < 10^{100} (x \neq 0) \\ \hline \\ n! \qquad 0 \le n \le 69^* \\ \hline \\ nPr \qquad 0 \le r \le n \le 999999999^* \\ 0 \le r \le n \le 999999999^* \\ 0 \le r \le 69 \\ \frac{n!}{(n+7)!} < 10^{100} \\ \hline \\ \phi DEG, D^{\text{MS}} \qquad 0^{00} 0.00001^* \le  x  < 10000^\circ \\ \hline \\ x, y \to r, \theta \qquad \sqrt{x^2 + y^2} < 10^{100} \\ \hline \\ DRG \blacktriangleright \qquad DEG \to RAD :  \theta  < \frac{10}{19} \times 10^{10} \\ GRAD :  \theta  < \frac{10}{9} \times 10^{10} \\ \hline \\ DRG \to BIN \qquad 0 \le r \le 1111111111 \\ DEN \qquad 0 \le x \le 2222222222 \\ 22222222222222222222$
$\begin{array}{c} y^{X} \\ v < 0: & x = n \\ (0 <  x  < 1: \frac{1}{x} = 2n - 1, x \neq 0)^{*}, \\ -10^{100} < x \log  y  < 100 \\ (x \neq 0)^{*}, \\ v > 0: & x \log  y  < 100 \\ (x \neq 0)^{*}, \\ v > 0: & x = 2n - 1 \\ (0 <  x  < 1: \frac{1}{x} = n, x \neq 0)^{*}, \\ -10^{100} < \frac{1}{x} \log y < 100 (x \neq 0) \\ v > 0: & x = 2n - 1 \\ (0 <  x  < 1: \frac{1}{x} = n, x \neq 0)^{*}, \\ -10^{100} < x < 230.2585092 \\ \hline \\ 10^{X} \\ -10^{100} < x < 100 \\ \hline \\ sinh x, cosh x, \\ tanh x \\ \hline \\  x  < 10^{90} \\ \hline \\ cosh^{-1} x \\ \hline \\  x  < 10^{90} \\ \hline \\ x^{3} \\  x  < 2.15443469 \times 10^{33} \\ \hline \\ \sqrt{x} \\ \hline \\  x  < 10^{100} \\ \hline \\ x^{3} \\ \hline \\  x  < 10^{100} \\ \hline \\ x^{3} \\ \hline \\  x  < 10^{100} \\ \hline \\ x^{3} \\ \hline \\  x  < 10^{100} \\ \hline \\ x^{3} \\ \hline \\  x  < 10^{100} \\ \hline \\ x^{3} \\ \hline \\  x  < 10^{100} \\ \hline \\ x^{3} \\ \hline \\  x  < 10^{100} \\ \hline \\ x^{3} \\ \hline \\  x  < 10^{100} \\ \hline \\ x^{3} \\ \hline \\  x  < 10^{100} \\ \hline \\ x^{3} \\ \hline \\  x  < 10^{100} \\ \hline \\ x^{3} \\ \hline \\  x  < 10^{100} \\ \hline \\ x^{3} \\ \hline \\  x  < 10^{100} \\ \hline \\ x^{3} \\ \hline \\  x  < 10^{100} \\ \hline \\ x^{3} \\ \hline \\  x  < 10^{100} \\ \hline \\  x  < 10^$
$x\sqrt{y} \qquad \begin{array}{lll} \bullet y > 0: & -10^{100} < \frac{1}{x} \log y < 100 \ (x \neq 0) \\ \bullet y = 0: & 0 < x < 10^{100} \\ \bullet y < 0: & x = 2n-1 \\ (0 <  x  < 1: \frac{1}{x} = n, x \neq 0)^*, \\ & -10^{100} < \frac{1}{x}  \log  y  < 100 \\ \end{array}$ $e^{x} \qquad -10^{100} < x < 230.2585092$ $10^{x} \qquad -10^{100} < x < 100$ $\sinh x, \cosh x, \\ \tanh x \qquad  x  \le 230.2585092$ $1 \le x < 10^{100}$ $\cosh^{-1}x \qquad  x  < 10^{100}$ $\cosh^{-1}x \qquad  x  < 10^{100}$ $\cosh^{-1}x \qquad  x  < 10^{100}$ $\tan h^{-1}x \qquad  x  < 1$ $x^{2} \qquad  x  < 10^{100}$ $x^{3} \qquad  x  < 2.15443469 \times 10^{33}$ $\sqrt{x} \qquad 0 \le x < 10^{100}$ $x^{-1} \qquad  x  < 10^{100} \ (x \neq 0)$ $n! \qquad 0 \le n \le 69^{\circ}$ $nPr \qquad 0 \le r \le n \le 999999999^{\circ}$ $\frac{n!}{(n-r)!} < 10^{100}$ $\cos r \le n \le 9999999999^{\circ}$ $\frac{n!}{(n-r)!} < 10^{100}$ $\phi DEG, D^{\circ}MS \qquad 0^{\circ}0^{\circ}0.0001^{\circ} \le  x  < 10000^{\circ}$ $x, y \rightarrow r, \theta \qquad \sqrt{x^{2} + y^{2}} < 10^{100}$ $DEG: \qquad  \theta  < \frac{10}{100} \times 10^{\circ}$ $PRAD: \qquad  \theta  < \frac{\pi}{100} \times 10^{\circ}$ $PRAD: \qquad  \theta  < \frac{\pi}{100} \times 10^{\circ}$ $PRAD: \qquad  \theta  < \frac{\pi}{100} \times 10^{\circ}$ $PEN \qquad 0 \le x \le 1111111111$ $OCT \qquad 0 \le x \le 2222222223 \le x \le 44444444444$ $0 \le x \le 222222223 \le x \le 44444444444$ $0 \le x \le 222222223 \le x \le 44444444444$ $0 \le x \le 222222223 \le x \le 444444444444$ $0 \le x \le 2222222223 \le x \le 44444444444$ $0 \le x \le 222222223 \le x \le 44444444444$ $0 \le x \le 222222223 \le x \le 44444444444$ $0 \le x \le 222222223 \le x \le 44444444444$ $0 \le x \le 2222222223 \le x \le 44444444444$ $0 \le x \le 2222222223 \le x \le 44444444444$ $0 \le x \le 2222222223 \le x \le 44444444444$ $0 \le x \le 222222223 \le x \le 44444444444$ $0 \le x \le 222222223 \le x \le 44444444444$ $0 \le x \le 222222223 \le x \le 44444444444$ $0 \le x \le 222222223 \le x \le 44444444444$ $0 \le x \le 2222222223 \le x \le 44444444444$ $0 \le x \le 2232222223 \le x \le 44444444444$ $0 \le x \le 2232222223 \le x \le 44444444444$ $0 \le x \le 230.2585092$ $10^{2} \qquad 10^{2} \qquad 10^{$
$e^{X} \qquad -10^{100} < \frac{1}{x} \log  y  < 100$ $e^{X} \qquad -10^{100} < x \le 230.2585092$ $10^{X} \qquad -10^{100} < x \le 100$ $\sinh x, \cosh x, \\ \tanh x \qquad  x  \le 230.2585092$ $\sinh^{-1} x \qquad  x  \le 10^{90}$ $\cosh^{-1} x \qquad 1 \le x < 10^{90}$ $\tanh^{-1} x \qquad  x  < 10^{90}$ $\cosh^{-1} x \qquad 1 \le x < 10^{90}$ $\tanh^{-1} x \qquad  x  < 1$ $x^{2} \qquad  x  < 10^{90}$ $x^{3} \qquad  x  < 2.15443469 \times 10^{33}$ $\sqrt{x} \qquad 0 \le x < 10^{100}$ $x^{-1} \qquad  x  < 10^{100} (x \ne 0)$ $n! \qquad 0 \le n \le 69^{*}$ $nPr \qquad 0 \le r \le n \le 999999999^{*}$ $\frac{1}{(n-r)!} < 10^{100}$ $\cosh^{-1} x \qquad 0 \le r \le 69^{*}$ $nPr \qquad 0 \le r \le 69^{*}$ $\frac{1}{(n-r)!} < 10^{100}$ $\cosh^{-1} x \qquad 0 \le r \le 69^{*}$ $\frac{1}{(n-r)!} < 10^{100}$ $\cosh^{-1} x \qquad 0 \le r \le 69^{*}$ $\frac{1}{(n-r)!} < 10^{100}$ $\cosh^{-1} x \qquad 0 \le r \le 69^{*}$ $\frac{1}{(n-r)!} < 10^{100}$ $\cosh^{-1} x \qquad 0 \le r \le 69^{*}$ $\frac{1}{(n-r)!} < 10^{100}$ $\cosh^{-1} x \qquad 0 \le r \le 69^{*}$ $\frac{1}{(n-r)!} < 10^{100}$ $\cosh^{-1} x \qquad 0 \le r \le 69^{*}$ $\frac{1}{(n-r)!} < 10^{100}$ $\cosh^{-1} x \qquad 0 \le r \le 69^{*}$ $\frac{1}{(n-r)!} < 10^{100}$ $\cosh^{-1} x \qquad 0 \le r \le 69^{*}$ $\frac{1}{(n-r)!} < 10^{100}$ $\cosh^{-1} x \qquad 0 \le r \le 69^{*}$ $\frac{1}{(n-r)!} < 10^{100}$ $\cosh^{-1} x \qquad 0 \le r \le 69^{*}$ $\frac{1}{(n-r)!} < 10^{100}$ $\cosh^{-1} x \qquad 0 \le r \le 69^{*}$ $\frac{1}{(n-r)!} < 10^{100}$ $\cosh^{-1} x \qquad 0 \le r \le 69^{*}$ $\frac{1}{(n-r)!} < 10^{100}$ $\cosh^{-1} x \qquad 0 \le r \le 69^{*}$ $\frac{1}{(n-r)!} < 10^{100}$ $\cosh^{-1} x \qquad 0 \le r \le 69^{*}$ $\frac{1}{(n-r)!} < 10^{100}$ $\cosh^{-1} x \qquad 0 \le r \le 10^{100}$ $\cosh^{-1}$
$ e^{x}                                    $
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
sinh x, cosh x, tanh x  sinh x, cosh x, tanh x    x   < 10^{50}    cosh <sup>-1</sup> x   1 ≤ x < 10^{50}    tanh <sup>-1</sup> x     x   < 1  x <sup>2</sup>     x   < 10^{50}    x <sup>3</sup>     x   < 2.15443469×10 <sup>33</sup>    √x   0 ≤ x < 10 <sup>100</sup>    x <sup>-1</sup>     x   < 10 <sup>100</sup> (x ≠ 0)    n!   0 ≤ n ≤ 69*    nPr   0 ≤ r ≤ n ≤ 999999999*    n!
$\begin{array}{llllllllllllllllllllllllllllllllllll$
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$x^2$
$x^{3} \qquad  x  < 2.15443469 \times 10^{33}$ $\sqrt{x} \qquad 0 \le x < 10^{100}$ $x^{-1} \qquad  x  < 10^{100} (x \neq 0)$ $n! \qquad 0 \le n \le 69^{*}$ $nPr \qquad 0 \le r \le n \le 999999999^{*}$ $\frac{n!}{(n-r)!} \le 10^{100}$ $0 \le r \le n \le 9999999999^{*}$ $0 \le r \le n \le 9999999999^{*}$ $0 \le r \le 69$ $\frac{n!}{(n-r)!} < 10^{100}$ $x, y \to r, \theta \qquad \sqrt{x^{2} + y^{2}} < 10^{100}$ $x, y \to r, \theta \qquad 0 \le r < 10^{100}$ $PaDEG, D^{\circ}MS$ $DEGG, D^{\circ}MS$ $0^{\circ}O_{\cdot}O_{\cdot}O_{\cdot}O_{\cdot}O_{\cdot}^{\circ} =  x  < 10000^{\circ}$ $x, y \to r, \theta \qquad \sqrt{x^{2} + y^{2}} < 10^{100}$ $PaDEG:  \theta  < 10^{10}$ $PaDEG:  \theta  < \frac{1}{9} \times 10^{10}$ $PaDEG:  \phi  < 1$
$ \sqrt{x} \qquad 0 \le x < 10^{100} $ $ x^{-1} \qquad  x  < 10^{100} (x \ne 0) $ $ n! \qquad 0 \le n \le 69^* $ $ nPr \qquad 0 \le r \le n \le 9999999999^* $ $ \frac{n!}{(n-r)!} < 10^{100} $ $ 0 \le r \le 69 $ $ \frac{n!}{(n-r)!} < 10^{100} $ $ 0 \ge r \le 69 $ $ \frac{n!}{(n-r)!} < 10^{100} $ $ 0 \ge r \le 69 $ $ \frac{n!}{(n-r)!} < 10^{100} $ $ 0 \ge r \le 69 $ $ \frac{n!}{(n-r)!} < 10^{100} $ $ x, y \to r, \theta \qquad \sqrt{x^2 + y^2} < 10^{100} $ $ Pade:  \theta  < 10^{10} $ $ Pade:  \theta  < 10^{10} $ $ Pade:  \theta  < \frac{1}{180} \times 10^{10} $ $ Pade:  $
$x^{-1}$
n! $0 \le n \le 69^*$ nPr $0 \le r \le n \le 9999999999^*$ $\frac{n!}{(n+r)!} < 10^{100}$ $0 \le r \le n \le 99999999999^*$ $0 \le r \le 69$ $\frac{n!}{(n+r)!} < 10^{100}$ $0 \ge r \le 69$ $\frac{n!}{(n+r)!} < 10^{100}$ $0 \le r \le 10^{100}$ DEG: $ \theta  < 10^{10}$ RAD: $ \theta  < \frac{\pi}{180} \times 10^{10}$ GRAD: $ \theta  < \frac{\pi}{180} \times 10^{10}$ DEG: $ \theta  < 10^{10}$ RAD: $ \theta  < \frac{\pi}{2} \times 10^{10}$ DEG: $ \theta  < 10^{10}$ RAD: $ \theta  < \frac{\pi}{2} \times 10^{10}$ DEG: $ \theta  < 10^{10}$ RAD: $ \theta  < \frac{\pi}{2} \times 10^{10}$ DEG: $ \theta  < \frac{\pi}{2} \times 10^{10}$ DEG: $ \theta  < 10^{10}$ RAD: $ \theta  < \frac{\pi}{2} \times 10^{10}$ DEG: $ \theta  < 10^{10}$ RAD: $ \theta  < \frac{\pi}{2} \times 10^{10}$ DEG: $ \theta  < 10^{10}$ RAD: $ \theta  < \frac{\pi}{2} \times 10^{10}$ RAD: $ \theta  < \frac{\pi}{2} \times 10^{11}$ DEG: $ \theta  < \frac{\pi}{2} \times 10^{11}$ PEN: $222222223 \times x \le 44444444444$ DEG: $2 \times x \le 22222222 \times x \le 4444444444$ DEG: $2 \times x \le 22222223 \times x \le 44444444444$ DEG: $2 \times x \le 22222223 \times x \le 44444444444$ DEG: $2 \times x \le 22222223 \times x \le 44444444444$ DEG: $2 \times x \le 22222223 \times x \le 444444444444$ DEG: $2 \times x \le 22222223 \times x \le 444444444444$ DEG: $2 \times x \le 22222223 \times x \le 444444444444$ DEG: $2 \times x \le 22222223 \times x \le 444444444444444444444444444444444$
nPr $ \begin{array}{c} 0 \leq r \leq n \leq 9999999999^{\circ} \\ \frac{n!}{(n-r)!} < 10^{100} \\ \\ 0 \leq r \leq n \leq 99999999999^{\circ} \\ 0 \leq r \leq 69 \\ \frac{n!}{(n-r)!} < 10^{100} \\ \\                                $
nPr
nCr 0 ≤ r ≤ 69
$ \frac{ \mathbf{n} }{ \mathbf{n}-\mathbf{r} } < 10^{100} $ $ \frac{ \mathbf{n} }{ \mathbf{n}-\mathbf{r} } < 10^{100} $ $ \frac{ \mathbf{n} }{ \mathbf{n}-\mathbf{r} } < 10^{100} $ $ \frac{ \mathbf{n} }{ \mathbf{n}-\mathbf{r} } < 10^{100} $ $ x, y \to r, \theta $ $ 0 \le r < 10^{100} $ $ DEG:                                   $
$x, y \to r, \theta \qquad \sqrt{x^2 + y^2} < 10^{100}$ $0 \le r < 10^{100}$ $DEG:   \theta  < 10^{10}$ $BAD:   \theta  < \frac{\pi}{180} \times 10^{10}$ $GRAD:   \theta  < \frac{19}{9} \times 10^{10}$ $DEG \to RAD \to RA$
$\begin{array}{c} 0 \leq r < 10^{100} \\ \text{DEG:}   \theta  < 10^{10} \\ \text{RAD:}   \theta  < \frac{\pi}{180} \times 10^{10} \\ \text{GRAD:}   \theta  < \frac{\pi}{9} \times 10^{10} \\ \text{GRAD:}   \theta  < \frac{\pi}{9} \times 10^{10} \\ \text{GRAD:}   \theta  < \frac{\pi}{9} \times 10^{10} \\ \text{DEG} \rightarrow \text{RAD} \rightarrow \text{GRAD} \rightarrow \text{DEG:}   x  < 10^{100} \\ \text{RAD} \rightarrow \text{GRAD:}   x  < \frac{\pi}{2} \times 10^{98} \\ \text{DEC} \qquad \rightarrow \text{BIN} \qquad 1000000000 \leq x \leq 1111111111 \\ \rightarrow \text{DET} \qquad 0 \leq x \leq 1111111111 \\ \rightarrow \text{OCT} \qquad \text{PEN} \qquad 0 \leq x \leq 22222222 \leq x \leq 4444444444 \\ \text{AND} \qquad \text{OCT} \qquad 4000000000 \leq x \leq 7777777777 \\ \text{OR} \qquad 0 \leq x \leq 37777777777 \\ \text{OR} \qquad 0 \leq x \leq 37777777777 \\ \text{NOR} \qquad \text{HEX} \qquad \text{FDABF41CO1} \leq x \leq \text{FFFFFFFFFF} \\ \text{NOR} \qquad 0 \leq x \leq 1111111111 \\ \text{DEN} \qquad 10000000000 \leq x \leq 1111111111 \\ \text{PEN} \qquad 2222222223 \leq x \leq 44444444444 \\ \text{DESCAUSE} \qquad 10 \leq x \leq 1111111111 \\ \text{PEN} \qquad 2222222223 \leq x \leq 44444444444 \\ \text{DESCAUSE} \qquad 10 \leq x \leq 1111111111 \\ \text{PEN} \qquad 2222222223 \leq x \leq 44444444444 \\ \text{DESCAUSE} \qquad 10 \leq x \leq 1111111111 \\ \text{PEN} \qquad 10 \leq x \leq 22222223 \leq x \leq 44444444444 \\ \text{DESCAUSE} \qquad 10 \leq x \leq 1111111111 \\ \text{DEN} \qquad 10 \leq x \leq 22222223 \leq x \leq 44444444444 \\ \text{DESCAUSE} \qquad 10 \leq x \leq 1111111111 \\ \text{DEN} \qquad 10 \leq x \leq 22222223 \leq x \leq 44444444444 \\ \text{DESCAUSE} \qquad 10 \leq x \leq 1111111111 \\ \text{DEN} \qquad 10 \leq x \leq 1111111111 \\ \text{DEN} \qquad 10 \leq x \leq 22222223 \leq x \leq 44444444444 \\ \text{DESCAUSE} \qquad 10 \leq x \leq 1111111111 \\ \text{DEN} \qquad 10 \leq x \leq 111111111 \\ \text{DEN} \qquad 10 \leq x \leq 1111111111 \\ \text{DEN} \qquad 10 \leq x \leq 111111111 \\ \text{DEN} \qquad 10 \leq x \leq 1111111111 \\ \text{DEN} \qquad 1$
PAG → x, y
DRG ► DEG→RAD, GRAD→DEG: $ x  < 10^{100}$ RAD→GRAD: $ \theta  < \frac{19}{9} \times 10^{10}$ RAD→GRAD→DEG: $ x  < 10^{100}$ RAD→GRAD: $ x  < \frac{\pi}{2} \times 10^{90}$ BIN: $ x  < \frac{\pi}{2} \times 111111111$ PEN: $ x  < \frac{\pi}{2} \times 111111111$ PEN: $ x  < \frac{\pi}{2} \times \frac{\pi}{$
DRG ► DEG→RAD, GRAD→DEG: $ x  < 10^{100}$ RAD→GRAD: $ x  < \frac{\pi}{2} \times 10^{98}$ DEC $ x  < \frac{\pi}{2} \times 10^{98}$ BIN : $1000000000 \le x \le 1111111111$ $0 \le x \le 111111111$ $0 \le x \le 111111111$ $0 \le x \le 111111111$ OR $0 \le x \le 111111111$ OR $0 \le x \le 111111111$ OR $0 \le x \le 1111111111$ OR $0 \le x \le 1111111111$ SOR $0 \le x \le 1111111111$ $0 \le x \le 1111111111$ BIN : $1000000000 \le x \le 11111111111$ $0 \le x \le 1111111111$ PEN : $2222222223 \le x \le 44444444444444444444444444444444$
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
→PEN
$ \begin{array}{llllllllllllllllllllllllllllllllllll$
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
XNOR $0 \le x \le 2540BE3FF$ BIN : $1000000000 \le x \le 11111111111111111111111$
$0 \le x \le 1111111111$ PEN : 2222222223 \le x \le 4444444444
PEN : 222222223 ≤ x ≤ 4444444444
NOT $0 \le x \le 2222222221$ OCT : $4000000000 \le x \le 7777777777$
$0 \le x \le 3777777777$ HEX : FDABF41C01 \( \le x \) \( \le FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF
0 ≤ x ≤ 2540BE3FE
BIN : $1000000001 \le x \le 11111111111111111111111$
$\begin{array}{c} 0 \le x \le 1111111111 \\ \text{PEN} \qquad :  2222222223 \le x \le 4444444444 \\ 0 \le x \le 2222222222 \end{array}$
$0 \le x \le 1111111111$ PEN : 2222222223 \le x \le 4444444444

\* n, m, r: integer



products should not be mixed with

general household

waste. There is a

separate collection system for these

products.

# Attention: Your product is marked with this symbol. It means that used electrical and electronic

#### ENGLISH Information on the Disposal of this Equipment and its Batteries

In the European Union
 Attention: If you want to dispose of this equipment, please do not use the ordinary dust bin!

Issue the ordinary dust bin!

Used electrical and electronic equipment must be treated separately and in accordance with legislation that requires proper treatment, recovery and recycling of used electrical and electronic equipment. Following the implementation by member states, private households within the EU states may return their used electrical and electronic equipment to designated collection facilities free of charge in some countries? your local retailer may also take back your old product free of charge if you purchase a similar new one.

1) Please contact your local authority for further details. If your used electrical or electronic equipment has batteries or accumulators, please dispose of these separately beforehand according to local requirements. By disposing of this product correctly you will help ensure that the waste undergoes the necessary treatment, recovery and recycling and thus prevent potential negative effects on the environment and human health which could otherwise arise due to inappropriate waste handling.

2. In other Countries outside the EU

In other Countries outside the EU

If you wish to discard this product, please contact your local authorities and ask for the correct method of disposal.

Manufactured by: SHARP CORPORATION

1 Takumi-cho, Sakai-ku, Sakai City, Osaka 590-8522, Japan

For EU only: Imported into Europe by:
MORAVIA Consulting spol. s r.o.
Olomoucká 83, 627 00 Brno, Czech Republic

For UK only: Imported into UK by:
MORAVIA Europe Ltd.
Belmont House, Station Way, Crawley,

West Sussex RH10 1JA, Great Britain