SCIENTIFIC CALCULATOR

MODEL EL-531XT

OPERATION MANUAL
PRINTED IN CHINA / IMPRIMÉ EN CHINE
21DSC(TINSKA317EHZZ)

About the calculation examples (including some formulas and tables), refer to the calculation examples sheet. Refer to the number on the right of each title in the manual for use. After reading this manual, store it in a convenient location for future reference.

- Tutura reference.

 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 fire, and as deposing it to excessively hundred or daily arrivorment, and of expension in the carry of the calculator away fire, and as deposing it to excessively hundred or daily arrivorment, can splash not it. Raindrops, water spray, juice, coffee, steam, perspiration, etc. will also causes mailmention.
- 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.

- scratches.

 Do not drop it or apply excessive force.

 Never dispose of batteries in a fire.

 Keep batteries out of the reach of children.

 This product, including accessories, may change due to up grading without prior notice.

grading without prior notice.

NOTICE

SHARP strongly recommends that separate permanent written records be kept of all important data. Data may be recorded by the prior of all important data. Data may be recorded to the prior of the prior

- Press the RESET switch (on the front), with the tip of a ball-point pan or similar object, only in the following cases. Do not the result of the result of the result of the result of the the RESET switch crases all data stored in memory. When using for the first time 4. Alterreplacing the battery 1. To clear all memory contents When an abnormal condition occurs and all keys are inop-erative.

erative.
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 of angle.

 Only the symbols required for the uses under instruction are only the symbols required for the uses under instruction are placed to the control of the control of

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

Fraction Calculations
This calculator performs arithmetic operations and memory calculations 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.

number is converted to and displayed as a decimal number. Binary, Pental, Octal, pecimal, and Hexadecimal [9]. This calculator can perform conversions between numbers expressed in binary, pental, octal, decimal and haxadecimal systems. It can also perform the four basic attimeted operations, calculations with parentheses and memory calculations with different carry out the folgical operations AND, different carry out the folgical operations AND. Conversion to each system is performed by the following keys:

2ndF) ●BN: Converts to the binary system. "h" appears. and Persi: Converts to the pental system. "P" appears.
and Persi: Converts to the octal system. "O" appears.

were to the hexadecimal system. "A" appears.

@## @### Converts to the hexadecimal system. "H" appears.

disappear from the display.

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

are pressed.

Note: In this calculator, the hexadecimal numbers A - F are entered by pressing \(\frac{\tau^2}{2}, \(\frac{\tau^2}{2}, \(\frac{\tau^2}{2}, \(\frac{\tau^2}{2}, \) and \(\frac{\tau^2}{2}, \(\frac{\tau^2}{2}, \(\frac{\tau^2}{2}, \) and displayed as follows: $A \rightarrow H$, $B \rightarrow b$, $C \rightarrow \ell$, $D \rightarrow d$, $E \rightarrow \ell$, $F \rightarrow F$

In the binary, perial, cetal, and beaxedermial systems, fractional parts cannot be entered. When a decimal number having a fractional part is converted into a binary perial, cetal, or hexaded-to-compared to the property perial, cetal, or hexaded-the result of a binary, penial, cetal, or hexaded-material calculation includes a fractional part, the fractional part with periodical part periodical part, but periodical part, periodical

Time, Decimand Sexagesimal Calculations [10]. Convention between decimal and sexagesimal numbers can be performed. In addition, the four basic arithmetic operations and memory calculations can be carried out using the sexagesimal system.

Notation for sexagesimal is as follows:

Coordinate Conversions [11]

• Before performing a calculation, select the angular unit.

P | 1 | P | (s) | P (s) | X | Y | P (s) | P (

Modify Function [12]
In this calculator, calculation results are internally obtained in sclentific 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 results are displayed in the form 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 [13]

Rectangular coord. Polar coord. The calculation result is automatically stored in memories X

and Y.

Value of r or x: X memory

Value of θ or y: Y memory

12°34' <u>5678</u> ' _ minute

2ndF : Appears when (ලක්) is pressed, indicating that the functions shown in orange are enabled.

HYP : Indicates that (ිතුව has been pressed and the hyperbolic functions are enabled. if ලක්වල are pressed, the symbols "2ndf HYP" appear, indicating that inverse by-perbolic functions are enabled. Multi-line Playback function
The calcators is equipped with a function to recall previous equators in the normal mode. Equations also include calculation ending instructions such as = "and an amazimum of 14c Punctienters can be stored in memory. When the memory is full, stored equations are detected in the order of the obest first. Pressing [a.] will display the previous equation and the answer. Further pressing [a.] will display the previous equation mad the answer. Further pressing [a.] will display the previous equation made and the answer. Further pressing [a.] will display the previous equation and the answer. Further pressing [a.] will display the previous equation to end to include [a.] will display the previous equation of the pressing [a.] will display the previous equation of the pressing [a.] will display the previous [a.] will be pressing [a.] will be pressible [a.] will be previous perbolic functions are enabled, (mg) or (pG) has been presented, and entry foreign of memory contents and scale FUXSCHERG. Indicates that (pm) (STATMAR), (mg) or (pG) has been presented, and entry foreign of memory contents and scale FUXSCHERG. Indicates the rotation used to display a value and changes by SET LIP manu.

DECRADIGRAD: Indicates angular units and changes each time (pG) is presend.

EXXI : Appears when statistics mode is selected.

Indicates that a numerical value is stored in the independent memory.

independent memory, and input/deletion of statistical data. Priority Levels in Calculation
This calculator performs operations according to the following priority. The calculator (1.4 \times 1.2 \times 1

Mode Selection

Normal mode (NORMAL): MODE 0
Used to perform arithmetic operations and function calculations.

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

[Setting the Floating Point Numbers System in Scientific Notation] The calculator has two settings for displaying a floating point number NGRM1 (default setting) and NORM2. In each display setting, a number is automatically displayed in scientific notation outside a

→[ENGineering notation]	(ETUP) 0 (2)	33.33×10 ⁶⁹
→[SClentific notation]	(SETUP) 0 1	3.33×10 ⁹⁴
→[Fixed decimal point] [TAB set to 2]	(ETUP 0 0 0 (ETUP 1 2	39'330,30300
[Floating point (NORM1)]	ON/C 100000 + 3 =	33'333.33333

Statistical Calculation Formulas

Type
Linear y = a + bxExponential $y = a \cdot e^{bx}$ Logarithmic $y = a \cdot b \cdot \ln x$ Power $y = a \cdot x^2$ Regression formula

[15]

In the statistical calculation formulas, an error will occur when:

• The absolutor value of the intermediate result or calculation result is equal to or greater than 1 × 10°.

• 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.

Errors

Error Codes and Error Types

Syntaxerror (Error 1):

• An attempt was made to perform an invalid operation.
Ex. 2 [adf] [-r0]

of functions.

Calculation ranges

±10¹⁰ - ±9.99999999.10³⁰ and 0.

If the absolute value of an entry or a final or intermediate result of a calculation is less than 10¹³, the value is considered to be 0 in calculations and in the display.

BATTERY REPLACEMENT

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 ensure 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 erasureoccurs.

When to Replace the Battery
If the display has poor contrast or nothing appears on the display even when (RMC) is pressed in dim lighting, it is time to replace the battery.

Determination of the Angular Unit In this calculator, the following three angular units (degrees, radians, and grads) can be specified.



SCIENTIFIC CALCULATIONS

Press \$\overline{\text{WOSE}}\$ to select the normal mode. In each example, press \$\overline{\text{OW}}\$ to clear the display. And if the FIX, SCI, or ENG indicator is displayed, care the indicator by selecting 'NORM1' from the SET UP menu.

Arithmetic Operations [2]

The closing parenthesis j just before or me may be omitted.

Constant Calculations
I nonstant calculations, the addend becomes a constant. Subtraction and division are performed in the same manner. For multiplication, the multiplicand becomes a constant. When performing calculations using constants, constants will be displayed as K.

Bettor starring caucurative, green, and an advantage of the formation. The Random function has four settings for use in the normal or statistical roads, for this function cannot be selected while using the N-Base function.) Press (Dec) to exit.
 The generated possion-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 (金子 中間 0 ENT).
To generate the next random number, press (金子).

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

Memory Calculations [6]
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 corresponding variable key to store a

memory.
Press (RC) and a corresponding variable key to recall a value from the memory.
To place a variable in an equation, press (RM), followed by a desired variable key.

[Independent memory (M)] in addition to all the features of temporary memories, a value can be added to or subtracted from an existing memory value. Press ONC STO N 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

lote:
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.

Chain Calculations [7]

This calculator allows the previous calculation result to be used in the following calculation.

Keep batteries out of the reach of children.
 Exhausted batteries left in the calculator may leak and damage

Replacement Procedure



Cautions

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.

As the country of the cou

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ex F Tospecify e' : 2ndF e' Tospecify In : In Tospecify F : IN F Functions that are printed in orange above the key require to be pressed first before the key. When you specify the memory, press (Ama) first. Numbers for input value are not shown as keys, but as ordinary numbers.

BEFORE USING THE CALCULATOR

Power On and Off Press (NIC) to turn the calculator on, and (2ndF) OFF to turn it off.

Key Notation Used In this Manual In this manual, key operations are describe

Clearing the Entry and Memories

Clearing methods are	described in	the ta	ble as follows	S:
Clearing operation	Entry (Display)	M*1	A-F, X,Y*2 ANS*3	STAT*4 STAT VAR*5
ON/C	0	×	×	.*
2ndF CA	0	*	0	0
2ndF M-CLR 0 0	" 0	0	0	0
2ndF M-CLR 1 0	" O	0	0	0
RESET switch	0	0	0	0
∩ · Clear	v · Retain			

[About the Memory clear key] Press @df McR to display the menu

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

to delete a number/function, move the cursor to the number/function you wish to delete, then press $\boxed{\text{DE}}$. If the cursor is located at the right end of an equation, the $\boxed{\text{DE}}$ key will function as a back space key.

(SD) : Single-variable statistics (LINE) : Linear regression calculation
 (QUAD) : Quadratic regression calculation
 (EXP) : Exponential regression calculation 4 (LOG) : Logarithmic regression calculation

5 (PWR) : Power regression calculation : Inverse regression calculation 6 (INV)

Single-variable statistical calculation Statistics of (1) Linear regression calculation
Statistics of ① and ② and, in addition, estimate of y for a giver x (estimate y) and estimate of x for a given y (estimate x)

	performli an be he	ng calculations using a , \overline{b} and c , only one nume old.
	ž.	Mean of samples (xdata)
	- 43	Sample standard deviation (x data)
	GI	Population standard deviatio n(x data)
1	8.	Number of samples
	Σχ	Sum of samples (x data)
	Σx^2	Sum of squares of samples (x data)
	ŷ	Mean of samples (y data)
	sy	Sample standard deviation (y data)
	σу	Population standard deviation (y data)
	Σy	Sum of samples (y data)
(2)	200	Sum of squares of samples (y data)
(2)	Σn	Sum of products of samples (y y)

Entered data are kept in memory until [26F] CA are pressed or mode selection. Before entering new data, clear the memory contents.

[DataEntry]

The following statistics can be obtained for each station (refer to the table below):

x (estimate y) and estimate of x for a given y (estimate x) of x a given and estimate of x for a given y. (Since the calculator conversed formula from a linear regression formula before adults of cultivate y (estimate x) given y (estimate x

	Statistics of \emptyset and \emptyset and coefficients a,b,c in the quadratic regression formula $(p=a+b+c+c^2)$, (for quadratic regression calculations, no correlation coefficient (p) can be obtained.) When there are two x' values, press $\bigoplus_{c=a}^{m+c}$. When performing calculations using a,b and c , only one numeric value can be held.
	value can be neid.
ı	Mean of samples (xdata)

r Correlation coefficient
a Coefficient of regression equation
b Coefficient of regression equation
c Coefficient of quadratic regression equation
a Coefficient of quadratic regression equation

gle-variable data
Data (IXIA)
Data (IXIA)
Data (IXIA)
frequency (IXIA)
(To enter multiples of the same data)

Date [M] requests (min.)

and the bid other of the same data x and y.)

Date x [ss] Date y [ss] requesty [ss] (To enter multiples of the same data x and y.)

Up to 100 data lems can be entered. With the single-variable data, a data Item without frequency assignment is counted as one data Item, while as while an Item assigned with frequency is stored 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.

a set of three data terms.

[DataCorrection prior to pressing (BM) Immediately after a data entry.

Detection prior to pressing (BM) Immediately after a data entry.

Detection prior to pressing (BM):

Use (BM)

INITIAL SET LIP

Statistics mode (STAT): MODE 1 Used to perform statistical calculations.

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 ETUP to display the SET UP menu.

FSE TAB
0

A menu Item can be selected by:

• moving the flashing cursor by using

□ (□ key), or

• pressing the number key corresponding to the menu item number. If A or ▼ to displayed on the screen, press □ or ▼ to view the previous/next menu screen.

• Press GCC] to exit the SET UP menu.
[Selecting the Diployal Metation and Dealmal Places]
The calculator has four dipolay notation systems (Floating point, Floating opint, Selectific notation and Engineering notation) for displaying calculation results.
• When the FIX, SCI, or ENG symbol is displayed, the number of decimal places (TAB) can be set to any value between 0 and 5. Displayed values will be reduced to the corresponding number of digits.
• Resulting point number does not fit in the specified range, in a dictation of video displayed values to large the selection for details.
• Press ⊆TED, followed by (□), to display the following submenut.

-FIX SCI ENG 0 1 2 → -NORM1 NORM2 3 4

 $y=a+b\frac{1}{x}$ Quadratic $y = a + bx + cx^2$

ERROR AND CALCULATION RANGES

Ex 2 (3/8/1/xm)

Calculation enry (first 2):

The absolute value of an intermediate or first calculation result equals or rescreeds to ⁹²

An attempt was made of the calculation. The calculation range were exceeded while performing calculations. Deptheror (Error 3):

The calculation ranges were exceeded while performing calculations. Deptheror (Error 3):

The exhalts have been calculated in restrictions to the calculation in the calculations. So buffers in 574 first once.

Fourier to be of gifter of the calculation to the calculation of the calculation calculations.

Faultic to be of gifter of the calculation to be calculated to the calculation of the calculation in t

nequalionmust beshorterthan 142 characters).

Calculation Ranges

Within the ranges specified, this calculator is accurate in the ranges specified, this calculator is accurate in calculation error increases in confinious calculations due to accumulation of each calculation error increases in confinious calculations due to accumulation of each calculation error (This is the same part of the confinious calculations are continuous calculations are part of the vicinity of infection error will accumulate and become larger in the vicinity of infection points and singular points of functions.

[Random Coin]
To simulate a coin flip, 0 (head) or 1 (tail) can be randomly generated by pressing ②æ€ [2 €NT]. To generate the next random coin number, press [SNT].

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

Angular Unit Conversions [5]
Each time (angular unit changes in sequence.

the calculator.

Explosion risk may be caused by incorrect handling.

Do not throw batteries into a fire as they may explode



SPECIFICATIONS

Calculations:

Scientific calculations, statistical calculations, consequence, and consequen







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CALCULATION EXAMPLES EXEMPLES DE CALCUL

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[1] 🔺 🔻

①3(5+2)=	(ON/C) 3 ((5 (+) 2 () (=	21.
②3×5+2=	3 × 5 + 2 =	17.
33×5+3×2=	3 × 5 + 3 × 2 =	21.
→ ①	(2ndF) (A)	21.
→ ②	▼	17.
→ ③	▼	21.
→ ②		17.

[2] + - X ÷ () +/- Exp

45+285÷3=	ON/C 45 + 285 ÷ 3 =	140.
18+6 15-8	(18 + 6) ÷ (15 - 8 =	3.428571429
42x(-5)+120=	42 <u>X +/- 5 + 120 =</u> *1 (5 +/-) *1	-90.
(5×¶@(4×10 ⁻³)=	5 Exp 3 ÷ 4 Exp +/- 3 =	1'250'000.

[3]

34+57= 45+57=	34 + 57 = 45 =	9 ¹
79 <u>–59</u> = 56 <u>–59</u> ≈	79 — 59 = 56 =	21
56 <u>+8</u> = 92 <u>+8</u> =	56 ÷ 8 = 92 =	11.
68×25= 68×40=	68 × 25 = 40 =	1'70 2'72

[4]	$\begin{array}{c} \text{ sin } \big(\cos\big)\big(\tan\big)\big(\sin^{-1}\big)\big(\cos^{-1}\big)\big(\tan^{-1}\big) \end{array} \\ \pi \left(DRG\right)\big(hyp\right) \text{ arc hyp} \\ \end{array}$
	in log e^x 10 x x^{-1} x^2 x^3 $\sqrt{}$ y^x $\sqrt[x]{}$
	³ √ n! nPr nCr %

sin60[°]=	ON/C sin 60 =	0.866025403
$\cos_{4}^{\pi}[\text{rad}]=$	DRG $(\pi \div 4)$	0.707106781
tan ⁻¹ 1=[g]	DRG (2ndF) (tan-1) 1 =	50.
(cosh5 + sinh 1.5) ² =	ON/C (hyp) cos 1.5 + hyp sin 1.5)	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 ³ =	2ndF) (e ^x) 3 =	20.08553692
10 ^{1.7} =	2ndF 10 ^x 1.7 =	50.11872336
1/6+1/7=	6 (2ndF) (X-1) + 7 (2ndF) (X-1) =	0.309523809
8 ⁻² - 3 ⁴ × 5 ² =	8 y ^x +/- 2 - 3 y ^x 4 x 5 x ² =	-2'024.984375
$(12^3)^{\frac{1}{4}}=$	12 y ^x 3 y ^x 4 2ndF X ⁻¹ =	6.447419591
8 ³ =	8(x3) =	512.
√49 - ⁴ √81 =	√ 49 — 4 (2ndF) √ 81 =	4.
3√27 =	2ndF) 17 =	3.
4! =	4 (2ndF) nl =	24.
₁₀ P ₃ =	10 (2ndF) nPr 3 =	720.
₅ C ₂ =	5 (2ndF) (aCr) 2 (=	10.
500×25%=	500 X 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

• Plage des résultats des fonctions trigonométriques inverses

_	<u> </u>	
	$\theta = \sin^{-1} x, \theta = \tan^{-1} x$	$\theta = \cos^{-1} x$
DEG	-90 ≤ θ ≤ 90	0 ≤ θ ≤ 180
RAD	$-\frac{\pi}{2} \le \theta \le \frac{\pi}{2}$	$0 \le \theta \le \pi$
GRAD	-100 ≤ θ ≤ 100	0 ≤ θ ≤ 200

[5] DRG>

ON/C 90 2ndF DRG>	1.570796327 100.
2ndF DRGI	90.
2ndF) sin-1 0.8 =	53.13010235
2ndF) DRG▶	0.927295218
(2ndF) (DRGI►)	59.03344706
2ndF DRG▶	53.13010235
	2ndF DROP 2ndF DROP 2ndF Sinr1 0.8 = 2ndF DROP 2ndF DROP 2ndF DROP

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

A= 56	ON/C 56 STO A	56
B=68	68 STO B	68
A+2+B×4=	ALPHA A ÷ 2 +	
	ALPHA B X 4 =	300
	ON/C 8 X 2 STO M	16
24÷ <u>(8×2)</u> =	24 ÷ ALPHA M =	1.:
(8×2)×5=	ALPHA M X 5 =	80
	ON/C STO M	(
\$150×3:M1	150 × 3 M+	450
+)\$250:M2 =M1+250	250 M+	250
–)M2×5%	RCL M X 5 2ndF %	35
М	2ndF M- RCL M	665
\$1= ¥110	110 STO Y	110
¥26,510=\$?	26510 ÷ RCL Y =	241
\$2,750=¥?	2750 X RCL Y =	302'500
r = 3cm	3 (STO) Y	3
$\pi r^2 = ?$	π (ALPHA) Y χ^2 =	28.2743338
$(r \rightarrow Y)$		
24	24 (÷) (4 (+ 6)	
$\frac{24}{4+6} = 2.4()$	=	2.
3×(A)+60+(A)=	3 X (ALPHA) (ANS) + 60 ÷	
3X(M)+0U+(M)=	ALPHA ANS =	32.
	[ALPHA] [ANS] [=]	32

[7]

6+4=ANS	ON/C 6 + 4 =	10
ANS+5	+ 5 =	15
8×2=ANS	8 × 2 =	16
ANS ²	x² =	256
44+37=ANS √ANS=	44 + 37 =	81

[8] (ab/c) (d/c)

		-
	ON/C 3 (ab/c) 1 (ab/c) 2 (+) 4 (ab/c) 3 (=)	4 ₋₅₋₆
	4 (a%) 3 (=) (a%)	4.8333333333
	(2ndF) (d/c	29 - 6
		25 0
	2ndF 10 ^x 2 a ^{h/c} 3	4.641588834
		4.041300034
	7 a½ 5 y² 5 =	16807 ₋ 3125
	1 (a½ 8) ^x 1 (a½ 3	
	-	1 ⊢ 2
	√ 64 a½ 225 =	8 _□ 15
	(2 y ^x 3) (a ^{b/c}	8 ₋ 81
		0 0
	1.2 a‰ 2.3 =	<i>12</i>
	1 (DMS) 2 (DMS) 3 (a%) 2 (=)	0°31'1.5"
	1 Exp 3 (ab) 2 Exp 3 =	1
	ON/C 7 STO A	7.
	4 (a½) (ALPHA) A =	4 - 7
x]	1.25 + 2 a½ 5 =	1.65
	a½c	1 - 13 - 20
	ON/C 1.65 =	1.65
	a ^{b/c}	1 ₋ 13 <u>-</u> 20
	2ndF d/c	33 _□ 20
	a ^b /c	1.65

^{* 4} r 5 r 6=4 5

(9) SBIN PEN SOCT SHEX SDEC 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 +HE) 1AC (2ndf +HIN (2ndf +PEN (2ndf +PEN (2ndf +DEC)	110101100 ^b 3203 ^P 654 ⁰ 428.
BIN(1010-100) ×11 =	2ndF) ←BIN (1010 — 100 × 11 =	10010 b
BIN(111)→NEC	NEG 111 =	11111111001 b
HEX(1FF)+ OCT(512)= HEX(?)	2ndF) ← HEX 1FF (2ndF) ← OCT + + + + + + + + + + + + + + + + + + +	1511 ⁰ 349 ^H
2FEC- 2C9E=(A) +)2000- 1901=(B)	ONC STO M 2ndF •HEX 2FEC 2C9E M+ 2000 - 1901 M+ RCJ M	34E ^H 6FF ^H A4d ^H
1011 AND 101 = (BIN)	ON/C (2ndF) (+BIN) 1011 (AND) 101 =	1 b
5A OR C3 = (HEX@ndF ●HEX 5A OR C3 =	db H
NOT 10110 = (BIN)	2ndF)(◆BIN)(NOT) 10110 =	1111101001 b
24 XOR 4 = (OCT(2ndF) ◆00T 24 XOR 4 =	20 °
B3 XNOR 2D = (HEX) →DEC	2ndF ●HEX B3 (MOR) 2D = 2ndF ●DEC	FFFFFFF61 ^H –159.

[10] D'M'S ++DEG

12°39'18.05" → [10]	ON/C 12 (DMS) 39 (DMS) 18.05 (2ndF) (+DEG)	12.65501389
123.678 → [60]	123.678 (2ndF) ← DEG	123°40'40.8"
3h30m45s + 6h45m36s = [60]	3 (DMS) 30 (DMS) 45 (+ 6 (DMS) 36 (=	мs) 10°16'21"
1234°56'12" + 0°0'34.567" = [60]	1234 (DTMS) 56 (DTMS) 12 (+ 0 (DTMS) 0 (DTMS) 34.567 (=	1234°56'47"
3h45m - 1.69h = [60]	3 [7M/S] 45 - 1.69 = 2ndF ++DEG	2°3′36″
sin62°12'24" = [10]	sin 62 (DMS) 12 (DMS) 24	0.884635235

[11] →rθ →xy , ←-,→

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

[12] MDF SETUP

5.0.4110		
5+9=ANS	ON/C SET UP 0 0 SET UP 1 1	
ANS×9=	5 ÷ 9 =	0.6
[FIX,TAB=1]	X 9 = *1	5.0
	5 ÷ 9 = 2ndF MDF	0.6
	X 9 = *2	5.4
	SET UP 0 3	

^{*1 5.55555555555555510&}lt;sup>-1</sup>×9 *2 0.6×9

13] (DATA) (x,y) (Sy) (GY) (X') (Y')	\overline{X} Sx Gx n Σ Σy Σy Σxy r s	(x) (Σx^i) (\overline{y}) a b c
95 80 80 75 75 75	MODE 1 0 95 (DATA 80 (DATA (DATA) 75 (GATA) 50 (DATA)	0. 1. 2. 3. 4. 5.
$\overline{x} = 0$ $\overline{x} = 0$ $x = 0$	RCL	75.71428571 12.37179148 7. 530. 41'200. 13.3630621 178.5714286
$\frac{95-\bar{x}}{sx}$ × 10+50=	(95 — APHA X ÷ APHA Sx X 10 + 50 =	
x y 2 5 2 5 12 24 21 40 21 40 21 40 15 25	(MODE) 1 1 2 (M) 5 (DATA) (DATA) 12 (M) 24 (DATA) 21 (M) 40 (M) 3 (DATA) 15 (M) 25 (DATA) (RCL) 0 (RCL) 0 (RCL) 0 (RCL) 8x (RCL) 8y	0. 1. 2. 3. 4. 5. 1.050261097 1.826044386 0.995176343 8.541216597 15.67223812
$=3 \rightarrow y'=?$ $=46 \rightarrow x'=?$	3 (2ndF) y' 46 (2ndF) X'	6.528394256 24.61590706
x y 12 41 8 13 5 2 23 200 15 71	MODE 1 2 12 (xs) 41 (DATA 8 (xs) 13 (DATA 5 (xs) 20 (DATA 15 (xs) 200 (DATA 15 (xs) 71 (DATA RCL	0. 1. 2. 3. 4. 5. 5.357506761 -3.120289663 0.503334057
:=10→y'=? :=22→x'=?	10 (2ndF) y' 22 (2ndF) (X' (2ndF) (→→→) (2ndF) (→→→)	24.4880159 9.63201409 -3.432772026 9.63201409
14] DATA (A)	▼]	
DATA 30 40 40 50	MODE 1 0 30 (DATA) 40 (Exp.) 2 (DATA) 50 (DATA)	0. 1. 2. 3.
DATA 30 45 45	45 (x,y) 3 (DATA)	X2 = 45. N2 = 3.
45 60	▼ 60 DATA	X3 = 60.

	Σx^{s} \overline{y} D C	[16]
MODE 1 0 95 DATA 80 DATA DATA 75 (b) 3 DATA 50 DATA	0. 1. 2. 3. 4. 5.	sin x,
RCL X	75.71428571	sin-1x
RCL Ox	12.37179148 7.	tan-12
$\begin{array}{c} & \\ & \text{RCL} \\ & \text{C} \\ & \text{C} \\ & \text{C} \end{array}$	530. 41'200.	ln x, l
$ \begin{array}{c} \text{RCL} \text{S}x \\ x^2 = \end{array} $	13.3630621 178.5714286	yx
(95 — ALPHA X) ÷ ALPHA Sx X 10		35
+ 50 = MODE 1 1 1 2 (w) 5 (DATA) (DATA) 12 (bo) 24 (DATA) 21 (w) 40 (bo) 3 (DATA)	0. 1. 2. 3. 4.	x√y
15 (x.x) 25 (DATA)	5.	e ^x
RCL a RCL b	1.050261097 1.826044386	10 ^x
RCL r RCL Sx RCL Sy	0.995176343 8.541216597 15.67223812	sinh:
3 (2ndF) y' 46 (2ndF) X'	6.528394256 24.61590706	sinh
		cosh
MODE 1 2 12 (x.y) 41 (DATA)	0. 1.	tanh
8 (x,y) 13 DATA 5 (x,y) 2 DATA	2. 3.	x²
23 (x ₃) 200 DATA 15 (x ₃) 71 DATA	4. 5.	x ³
RCL a	5.357506761 -3.120289663	√x
RCL C	0.503334057	x-1
10 (2ndF) y'	24.4880159 9.63201409	n!
22 (2ndF) (X') (2ndF) (4-1-4) (2ndF) (4-1-4)	-3.432772026 9.63201409	nPr
		nCr
MODE 1 0	0.	↔DE
30 (DATA) 40 (x,y) 2 (DATA) 50 (DATA)	1. 2. 3.	x, y -
		r, θ -

r DATA ¬	MODE 1 0	О.
30	30 DATA	1.
40	40 (x,y) 2 (DATA)	2.
40	50 DATA	3.
50		
—		
r DATA ¬		
30		
45	45 (xx) 3 (DATA)	X2 = 45.
45	•	N2 = 3.
45		
60	▼ 60 (DATA)	X3 = 60.

Function Fonction	Dynamic ran ge Plage dynamique	
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}{2} \times 10^{10}$ $(\tan x : x \neq 100 (2n-1))$	
sin-1x, cos-1x	x ≤1	
tan⁻¹x, ³√x	x < 10 ¹⁰⁰	
In x, log x	10 ⁻⁹⁹ ≤ x < 10 ¹⁰⁰	
y ^x	• $y > 0$: $-10^{100} < x \log y < 100$ • $y = 0$: $0 < x < 10^{100}$ • $y < 0$: $x = n$ • $(0 < x < 1: \frac{1}{x} = 2n - 1, x \ne -10^{100} < x \log y < 100$	
x√y	• $y > 0$: $-10^{100} < \frac{1}{x} \log y < 100 \ (x \neq 0)$ • $y = 0$: $0 < x < 10^{100}$ • $y < 0$: $x = 2n - 1$ $(0 < x < 1 : \frac{1}{x} = n, x \neq 0)^n$ $-10^{100} < \frac{1}{x} \log y < 100$	
e^x	$-10^{100} < x \le 230.2585092$	
10 ^x	$-10^{100} < x < 100$	
sinh x, cosh x, tanh x	x \le 230.2585092	
sinh-1 x	x < 10 ⁵⁰	
cosh-1 x	1 ≤ x < 10 ⁵⁰	
tanh-1 x	x <1	
x²	x < 10 ⁵⁰	
x ³	x < 2.15443469×10 ³⁹	
\sqrt{x}	0 ≤ x < 10 ¹⁰⁰	
x-1	$ x < 10^{100} (x \neq 0)$	
n!	0 ≤ n ≤ 69*	
nPr	0 ≤ r ≤ n ≤ 9999999999* (n-r)! < 10 ¹⁰⁰	
nCr	$0 \le r \le n \le 9999999999$ * $0 \le r \le 69$ $\frac{n!}{(n-r)!} < 10^{100}$	
↔DEG, D°M'S	0°0′0.00001" ≤ x < 10000°	
$x, y \rightarrow r, \theta$	$\sqrt{x^2 + y^2} < 10^{100}$	
$r, \theta \rightarrow x, y$	$0 \le r < 10^{100}$ DEG: $ \theta < 10^{10}$ RAD: $ \theta < \frac{160}{190} \times 10^{10}$ GRAD: $ \theta < \frac{10}{9} \times 10^{10}$	

DEG \rightarrow RAD, GRAD \rightarrow DEG: $|x| < 10^{100}$ RAD \rightarrow GRAD: $|x| < \frac{\pi}{2} \times 10^{88}$

DRG ▶

→DEC →BIN	DEC BIN	 x ≤ 9999999999 1000000000 ≤ x ≤ 1111111111
→PEN →OCT	PEN	0 ≤ x ≤ 111111111 : 2222222223 ≤ x ≤ 4444444444
→HEX AND	ОСТ	0 ≤ x ≤ 2222222222 : 4000000000 ≤ x ≤ 7777777777
OR XOR	HEX	0 ≤ x ≤ 3777777777 : FDABF41C01 < x < FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF
XNOR		0 ≤ x ≤ 2540BE3FF
	BIN	: 1000000000 ≤ x ≤ 1111111111
	PEN	0 ≤ x ≤ 111111111 : 222222223 < x < 4444444444
NOT		0 ≤ x ≤ 222222221
	OCT	: 4000000000 ≤ x ≤ 7777777777 0 ≤ x < 3777777777
	HEX	FDABF41C01 ≤ x ≤ FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF
	BIN	: 1000000001 < x < 1111111111
		0≤x≤111111111
	PEN	2222222223 ≤ x ≤ 4444444444 0 < x < 2222222222
NEG	OCT	: 4000000001 ≤ x ≤ 777777777
	HEX	0 ≤ x ≤ 3777777777 : FDABF41C01 ≤ x ≤ FFFFFFFFFF
		0 ≤ x ≤ 2540BE3FF

* n, r: integer / entier

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[15]

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

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

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

$$\sum_{xy = x_1 + x_2 + \dots + x_n} \sum_{xy = x_1 + x_2 + \dots + x_n} \sum_{xy = x_1 + x_2 + \dots + x_n} \sum_{y = y_1 + y_2 + \dots + y_n} \sum_{y = y_1 + y_2 + \dots + y_n} \sum_{y = y_1^2 + y_2^2 + \dots + y_n^2}$$

