fx-82SOLAR II fx-260SOLAR II fx-260SOLAR II NF

User's Guide

CASIO Worldwide Education Website http://edu.casio.com

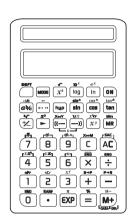
Manuals are available in multi languages at

http://world.casio.com/manual/calc

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fx-82SOLAR II fx-260SOLAR II

fx-260SOLAR II NF

Handling Precautions

- Be sure to press the ON key before using the calculator.
- Your calculator is made up of precision components. Never try to take it apart. Avoid dropping your calculator and otherwise subjecting it
- to strong impact.
- Do not store the calculator or leave it in areas exposed to high temperature or humidity, or large amounts of dust. When exposed to low temperatures, the calculator may require more time to display results and may even fail to operate. Correct operation will resume once the calculator is brought back to normal temperature.
- The display will go blank and keys will not operate during calculations. When you are operating the keyboard, be sure to watch the display to make sure that all your key operations are being performed correctly.
- With certain calculations, it may take some time before the result is displayed. The display is blank while a calculation is in progress.
- Avoid using volatile liquids such as thinner or benzine to clean the unit. Wipe it with a soft cloth, or with a cloth that has been dipped in a solution of water and a neutral detergent and wring out.
- In no event will the manufacturer and its suppliers be liable to you or any other person for any damages, expenses, lost profits, lost savings, or any other damages arising out of malfunction, repairs, or insufficient light. The user should prepare physical records of data to protect against such data loss.
- · Never dispose of the liquid crystal panel, or other components by burning them.
- · Before assuming malfunction of the unit, be sure to carefully reread this manual and ensure that the problem is not due to operational error.
- The contents of this manual are subject to change without notice.
- · No part of this manual may be reproduced in any form without the express written consent of the manufacturer.
- Be sure to keep all user documentation handy for future reference

Modes

Application	Key Operation	Mode Name*
Standard deviation calculations	MODE •	SD
Normal calculations	MODE 0	COMP
Calculations using degrees	MODE 4	DEG
Calculations using radians	MODE 5	RAD
Calculations using grads	MODE 6	GRA
Number of decimal place specification	MODE 7	FIX
Number of significant digit specification	MODE 8	SCI
Cancels FIX and SCI settings	MODE 9	NORM

- * Display indicators show current mode setting. Absence of display indicator indicates COMP Mode
- The above table is printed on the back of the calculator.

Note!

- · A mode guide is located at the top of the display screen. · DEG, RAD, and GRA modes can be used in combination with COMP and SD modes.
- MODE 9 does not exit SD mode.
- MODE 0 exits SD mode.
- MODE 0 does not clear SCI or FIX specifications.
- · Always press AC before entering DEG, RAD, and GRA
- Remember to always set the operating mode and angular unit (DEG, RAD, GRA) before starting your calculation.

Basic Calculations

- Use the COMP mode for basic calculations.
- Example 1: 23+4.5-53

• Example 2: 56×(-12)÷(-2.5)

23 🛨 4.5 🖃 53 🖃 -25.5

56 × 12 + ÷ 2.5 + =

• Example 3: 2÷3×(1×10²⁰) 2 ÷ 3 × 1 EXP 20 = 6.666666667¹⁹

268.8

• **Example 4:** $7 \times 8 - 4 \times 5 = 36$

7 **X** 8 **-** 4 **X** 5 **-**36.

4 × 5 ÷ 6 SHIFT X-Y 0.3

• Example 6: $2 \times [7+6 \times (5+4)] = 122$

2 × [... 7 + 6 × 122. [(... 5 + 4 ...)] =

- You can skip all operations before the E key.
- Example 7: $\frac{4}{3}\pi \times 5^3$

 $4 \div 3 \times \text{SHIFT} \times 5 \text{SHIFT} \times^3 = 523.5987756$

Constant Calculations

- Press ♣, ♠, ☒,or ♣ twice after inputting a number to make that number a constant.
- "K" is on the display while a constant is being used.
- Use the COMP mode for constant calculations.
- Example 1: 2.3+3, then 2.3+6

(2.3+3)	2.3 🛨 🛨 3 🖃	К	5.3
(2.3+6)	6 🗖	К	8.3

• Example 2: 12×2.3 , then $12 \times (-9)$

(12×2.3)	12 🗙 🗶 2.3 🚍	К	27.6
(12×(-9))	9 💤 🖪	К	-108.

• Example 3: 17+17+17+17 = 68

(17+17)	17 + + =	К	34.
(17+17+17)	8	К	51.
(17+17+17+17)		К	68.

• Example 4: $1.7^4 = 8.3521$

(1.72)	1.7 🗙 🗶 🖨 🗍	К	2.89
(1.73)	8	К	4.913
(1.74)	8	К	8.3521

Memory Calculations

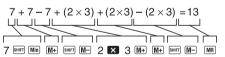
- Use the COMP mode for memory calculations.
- Use SHIFT MIN, M+, SHIFT M- and MR for memory calculations. IN TENTRAL MIN replaces current memory contents.

• Example 1: $(53+6)+(23-8)+(56\times2)+(99\div4)=210.75$

- "M" appears when there is a value in memory • To clear memory, press O SHIFT Min or AC SHIFT Min

		(/	
(53+6)	53 + 6 = SHIFT Min	М	59.
(23-8)	23 — 8 M+	М	15.
(56×2)	56 🔀 2 M+	М	112.
(99÷4)	99 🚼 4 M+	М	24.75
(Memory recall)	MR	М	210.75

• Example 2: To calculate the following using memory as



13.

• Example 3: To calculate the following using memory and a constant: $(12\times3)-(45\times3)+(78\times3)=135$

(12×3)	3 X X 12 = SHIFT Min	MK	36.
(45×3)	45 SHIFT M-	MK	135.
(78×3)	78 M+	MK	234.
(Memory recall)	MR	MK	135.

Fraction Calculations

(fx-82SOLAR II/fx-260SOLAR II only) Use COMP mode for fraction calculations.

• Total number of digits (including division marks) cannot exceed 10.

Fraction/decimal calculation result is always decimal.

• Example 1: $\frac{2}{3} + \frac{4}{5} = 1\frac{7}{15}$

2 @ 3 + 4 @ 5 = 1_ 7_15.

• Example 2: $3\frac{1}{4} + 1\frac{2}{3} = 4\frac{11}{12}$

1 🐠 2 🕬 3 🖪 4_11_12.

• Example 3: $\frac{2}{4} = \frac{1}{2}$

2 a½ 4 2_4. 1_2.

• Example 4: $\frac{1}{2} + 1.6 = 2.1$

2.1

• Example 5: $\frac{1}{2} \leftrightarrow 0.5$ (Fraction \leftrightarrow Decimal)

1⊿2. 1 [a½] 2 🖪 0.5 1_2.

• Example 6: $1\frac{2}{3} \leftrightarrow \frac{5}{3}$

a½ 2 a½ 3	1_2_3.
SHIFT d/c	5⊿3.
SHIFT d/c	1_2_3.

Percentage Calculations

- Use COMP mode for percentage calculations.
- Example 1: To calculate 12% of 1500.

1500 × 12 SHIFT % 180.

• Example 2: To calculate what percentage of 880 is 660. 660 🖶 880 SHIFT % 75.

• Example 3: To add 15% onto 2500.

• Example 4: To discount 3500 by 25%

2500 × 15 SHIFT % + 2875.

2625. 3500 🗶 25 SHIFT % 🗖

• Example 5: To calculate the following using a constant 12% of 1200 = 144 18% of 1200 = 216 23% of 1200 = 276

(12 %)	1200 × 12 SHIFT %	К	144.
(18 %)	18 SHIFT %	К	216.
(23 %)	23 SHIFT %	К	276.

• Example 6: 300 grams are added to a test sample originally weighing 500 grams, producing a final test sample of 800 grams. What percent of 500 grams is 800

• Example 7: What is the percentage change when a value

300 **+** 500 SHIFT % 160.

is increased from 40 to 46? 46 40 SHIFT %

Scientific Function Calculations

- Use COMP mode for scientific function calculations.
- · Some calculations may take a long time to complete.
- Wait for result before starting next calculation. • $\pi = 3.1415926536$

■ Sexagesimal Functions

• Example 1: 14°25'36" + 12°23'34" = 26°49'10"

14 ••• 25 ••• 36 ••• 🛨 12 🚥 23 🚥 34 🚥 🖪 26°49°10.

• Example 2: 1°2'3" + 4.56 = 5.594166667 1 ••• 2 ••• 3 ••• + 4.56 = 5.594166667

• Example 3: sin 87°65'43.21" = 0.999447513 (DEG mode) 87 ··· 65 ··· 43.21 ··· sin 0.999447513

• Example 4: 1.23 ↔ 1°13'48" 1.23 ••• 1°13°48. 1.23

• Example 5: 12°34' ↔ 12.56666667

12 ··· 34 ··· shift ··· 12.56666667

1°13°48.

RAD

0.440283084

0.5

You can also use ••• when inputting values to convert between sexagesimal and decimal.

■ Trigonometric/Inverse Trigonometric Functions

SHIFT $\pi \div 6 = \sin$

• Example 1: $\sin(\frac{\pi}{6} \text{ rad})$ (RAD mode)

• Example 2: cos 63°52'41" (DEG mode)

63 52 41

• Example 3: tan (-35gra)(GRA mode) -0.612800788 35 +/_ (tan

• Example 4: $\cos^{-1}(\frac{\sqrt{2}}{2} \text{ rad})$ (RAD mode)

2 SHIFT V 2 = SHIFT COS 0.785398163

• Example 5: To convert 45 degrees to radians, grads, and back to degrees

> MODE 4 45 45. SHIFT MODE 5 0.785398163 SHIFT MODE 6 50. DEG SHIFT MODE 4 45.

Repeated conversion between angle units can cause normally minute error to accumulate, resulting in poor

■ Hyperbolic/Inverse Hyperbolic Functions

3.6 hyp sin 18.28545536 • Example 1: sinh 3.6

• Example 2: sinh⁻¹ 30 30 hyp (sur) sin 4.094622224

■ Common and Natural Logarithms, Exponents

1.23 📵 0.089905111 • Example 1: log 1.23

4.49980967 • Example 2: In 90 (=log 90) 90 In

• Example 3: log 64

64 log 🖶 4 log 🚍 3.

• Example 4: $10^{0.4} + 5 e^{-3}$.4 SHIFT 10" + 5 X 3 1/2 SHIFT (e^x) = 2.760821773

 Example 5: 2³ 2 [xy] 3 **=** 8.

0.125 • Example 6: 2⁻³ 2 x 3 + = 10 SHIFT (e^x) 22026.46579 • Example 7: e^{10}

• Example 8: log sin 40°+ log cos 35° (DEG mode)

40 sin log + 35 cos log = -0.278567983 To convert to antilogarithm 0.526540784

2. • Example 9: 81/3 8 SHIFT (X^{1/2}) 3

■ Square Roots, Cube Roots, Squares, **Reciprocals and Factorials**

• Example 1: $\sqrt{2} + \sqrt{3} \times \sqrt{5}$

• Example 2: $\sqrt[3]{5} + \sqrt[3]{-27}$

• Example 3: (-30)2

2 SHIFT **(*) (*)** 3 SHIFT **(*) (*)** 5.287196909

5 SHIFT **₹ ±** 27 **1** SHIFT **₹ =** −1.290024053

• Example 4: 3 SHIFT 1/x 4 SHIFT 1/x =

30 +/- (x²)

SHIFT 1/x

40320. • Example 5: 8! 8 SHIFT (x/

FIX, SCI, NORM, RND, RAN#, ENG Calculations • Example 1: 1.234+1.234, rounding result to two places

> MODE 7 2 0.00 FIX 2.47 1.234 🛨 1.234 🖃

900.

12.

• Example 2: 1.234+1.234, rounding input to two places.

MODE 7 2 1.234 SHIFT RND + 2.46 1.234 SHIFT RND

• Press MODE 9 to clear FIX specification.

• Example 3: 1÷3, displaying result with two significant digits (SCI 2).

0.0 00 MODE 8 2 1 🖶 3 🖃 3.3-01

• Press MODE 9 to clear SCI specification.

• Example 4: To convert 56,088 meters to kilometers.

56088 SHIFT ENG 56.088 ⁰³

SHIFT RAN#

0.664

81.25-03 .08125 SHIFT ENG

• Example 6: To generate a random number between

• Example 5: To convert 0.08125 grams to milligrams.

Example (results differ each time)

■ Coordinate Conversion • Example 1: To convert polar coordinates (r=2, θ =60 $^{\circ}$) to

rectangular coordinates (x, y). (DEG mode) 2 SHIFT P+R 60 ■ 1.732050808

SHIFT X-Y swaps displayed value with value in memory.

• Example 2: To convert rectangular coordinates (1, $\sqrt{3}$) to polar coordinates (r, θ) . (RAD mode)

1 SHIFT R→P 3 SHIFT ✓ 🖃 θ 1.047197551

Permutation

• Example: To determine how many different 4-digit values can be produced using the numbers 1 through 7.

> 7 SHIFT [nPr] 4 = 840.

■ Combination

• Example: To determine how many different 4-member groups can be organized in a group of 10 individuals.

10 SHIFT (nCr) 4

Statistical Calculations (SD Mode)

- Press 🚾 🔹 to enter the SD Mode for statistical calculations using standard deviation.
- If FIX or SCI is on the display, press [9] first.
- Data input always starts with SHIFT SAC.
- **Example:** To calculate σ_{n-1} , σ_n , \bar{x} , n, Σx , and Σx^2 for the following data: 55, 54, 51, 55, 53, 53, 54, 52

Enter SD Mode.	MODE •	SD 0.
Input Data.	SHIFT (SAC) 55 (DATA) 54 (DATA) 51 (DATA) 55 (DATA) 53 (DATA) (DATA)	
	54 DATA 52 DATA	SD 52 .
Sample standard deviation	SHIFT G77-1	1.407885953
Population standard deviation	SHIFT On	1.316956719
Arithmetic mean	$oxed{ ext{SHIFT}} oxed{\overline{x}}$	53.375
Number of data	SHIFT n	SD 8.
Sum of values	SHIFT Σx	427.
Sum of squares of values	SHIFT Σx^2	22805.

- DATA DATA inputs the same data twice (as above).
- You can also input multiple entries of the same data using To input the data 110 ten times, for example, press 110
- · The above results can be obtained in any order, and not necessarily that shown above
- To delete data you have just input, press SHIFT DEL.

■ Making Corrections During Data Input

• Example 1: To change data you have just input

Correct	Actual	Correction
51 DATA	50 DATA	SHIFT DEL 51 DATA
130 X 31 DATA	120 X	AC 130 X 31 DATA
130 X 31 DATA	120 X 31	AC 130 X 31 DATA

• Example 2: To change data you previously input.

Correct	Actual	Correction
51 DATA	49 DATA	49 SHIFT DEL 51 DATA
130 × 31 DATA	120 X 30 DATA	120 X 30 SHIFT DEL 130 X 31 DATA

Technical Information

■ Keys and Their Functions

General

All clear	AC
Arithmetic calculations	
	€, 😑
Backspace	
Clear (retains memory)	С
Number input	0 - 9, •
Power on; All reset	ON
Sign change	+/_

Memory

Memory in	SHIFT Min
Memory minus	SHIFT M-
Memory plus	M+
Memory recall	MR

Special

Display/memory swap	
ExponentEXP	
Internal rounding	
Parentheses	
Pi (3.1415926536) π	
Select mode	
Sexagesimal, SHIFT,	
Shifts key functionsshift	

Scientific Functions

Arc cosine
Arc sineshiri shi'
Arc tangentshirt lan
Common antilogarithmshirt 10°
Common logarithm
Convert to degrees
Convert to gradsshirt Mode 6
Convert to radiansshirt Mode 5
Cosine
Cubeshiri x³
Cube rootshiri
Engineeringshiri ENG, Shiri ENG
Factorialshirt x!
Fraction*a½
Fraction*shirt d/c
Hyperbolic
Natural antilogarithmshirt ex
Natural logarithm
Percent %
Polar-to-rectangularshirt P-R
Power
Random number SHIFT RAMP
Reciprocalshirt 1/x
Rectangular-to-polarssir R-P

Root $[x^{\nu_j}]$
Sinesin
Squarex2
Square root
Tangenttan
Permutationshift nPr
Combinationshift nCr
* fx-82SOLAR II/fx-260SOLAR II only

Statistics (SD Mode)
Arithmetic mean
Data delete
Data input
Number of datashift n
Population standard deviation SHIFT G71
Sample standard deviation SHIFT G7:-
Statistical register clear
Sum of squares of values Σx^2
Sum of values Σ_x

■ Exponential Display Formats

This calculator can display up to 10 digits. Larger values are automatically displayed using exponential notation. In the case of decimal value, you can select between two formats that determine at what point exponential notation is used.

NORM 1

With NORM 1, exponential notation is automatically used for integer values with more than 10 digits and decimal values with more than two decimal places.

• NORM 2

With NORM 2, exponential notation is automatically used for integer values with more than 10 digits and decimal values with more than nine decimal places

To switch between NORM 1 and NORM 2

Press [100] 9. There is no indication on the display of which format is currently in effect, but you can determine the setting by performing the following calculation.

1 🕏 200 🖃	5. ⁻⁰³	NORM 1 format
	0.005	NORM 2 format

• All of the examples in this manual show calculation results using the NORM 1 format.

■ When you have a problem.....

If calculation results are not what you expect or if an error occurs, perform the following steps.

- 1. MODE 0 (COMP mode)
- 2. MODE 4 (DEG mode)
- 3. MODE 9 (NORM mode)
- 4. Check the formula you are working with to confirm it is correct.
- 5. Enter the correct modes to perform the calculation and

■ Making Corrections During Calculations

- If you make a mistake when inputting a value (but did not yet press an operator key), use 1 to backspace and delete input digits one-by-one. Or you can press C to clear the input entirely and start again.
- In a series of calculations, press C while an intermediate result is displayed to clear only the last calculation
- performed. To change the operator key (\P , \blacksquare , \boxtimes , \blacksquare , \boxtimes , \blacksquare) etc.) you just pressed, simply press the correct operator key. In this case, the operator of the last key you press is used, but the operation retains the order of precedence of the operation for the first key you pressed.

■ Overflow or Error Check

The following conditions make further calculation impossible. a. When a result (whether intermediate or final) or a total \times 1099. ("-E-" indicator appears on the display.)

- b. When function calculations are performed using a value that exceeds the input range. ("-E-" indicator appears on the display.)
- c. When an illogical operation (such as an attempt to calculate \bar{x} and σ_n while n=0) is performed during statistical calculations. ("-E-" indicator appears on the
- d. When an illegal mathematical operation (such as division by zero) is performed. ("-E-" indicator appears on display.)
- e. The total number of nested parentheses levels exceeds six, or when more than 18 pairs of parentheses are used. ("- L-" indicator appears on the display.)
- To clear any of the above conditions, press AC and perform the calculation from the beginning.
- In the case of condition e, you could also press C. This clears the intermediate result just prior to the overflow, so you can continue with the calculation from that point.
- · No error occurs when the result is within the range of $+(1\times10^{-99})$ to $-(1\times10^{-99})$. Instead, the display shows all zeros.

■ Power Supply

This calculator is powered by a solar cell that converts available light into electrical power.

Solar Cell Precautions

- The solar cell requires at least 50 lux of light to provide
- If available light is too low, the display may become dim, calculation functions may become impossible, or the contents of the independent memory may be lost. If this happens, move to an area with more light.

■ Order of Operations and Levels

Operations are performed in the following order of

- 1. Functions
- 2. x^y , $x^{1/y}$, $R \rightarrow P$, $P \rightarrow R$, nPr, nCr
- 3. ×, ÷ 4. +. -
- Operations with the same precedence are performed from left to right, with operations enclosed in parentheses performed first. If parentheses are nested, the operations enclosed in the innermost set of parentheses are performed first.
- Registers L, through L, store operations. There are six registers, so calculations up to six levels can be stored.
- Each level can contain up to three open parentheses, so parentheses can be nested up to 18 times.

- Example: The following operation uses 4 levels and 5 nested parentheses

The table below shows register contents following the above input.

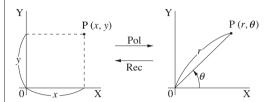
Register	Contents
х	4
L ₁	((5+
L_2	4 ×
L ₃	(((3 +
L ₄	2 ×
L ₅	
L ₆	

■ Formulas and Ranges

The following are the formulas and ranges that are applied to various calculations that can be performed using this calculator.

Coordinate Transformation

With polar coordinates, heta can be calculated within a range of $-180^{\circ} < \theta \le 180^{\circ}$. The calculation range is the same for radians and grads.



Permutation

- Input range: $n \ge r \ge 0$ (n, r: integers)
- Formula: $nPr = \frac{n!}{(n-r)!}$

Combination

- Input range: $n \ge r \ge 0$ (n, r: integers)
- Formula: $nCr = \frac{n!}{r!(n-r)!}$

Population Standard Deviation

$$\sigma_n = \sqrt{\frac{\sum_{i=1}^{n} (x_i - \vec{x})^2}{n}} = \sqrt{\frac{\sum_{i=1}^{n} (\sum_{i=1}^{n} x_i)^2 / n}{n}}$$

Sample Standard Deviation

$$\sigma_{n-1} = \sqrt{\frac{\sum_{i=1}^{n} (x_i - \bar{x})^2}{n-1}} = \sqrt{\frac{\sum_{i=1}^{n} (\sum_{i=1}^{n} x_i - \bar{x})^2 / n}{n-1}}$$

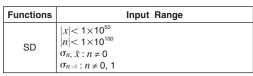
Input Range

Arithmetic Mean

$$\bar{x} = \frac{\sum_{i=1}^{n} x_i}{n} = \frac{\sum x}{n}$$

Input Ranges Functions

$\begin{array}{lll} & \text{tan}^{-1}x & x \leq 1 \\ & \text{tan}^{-1}x & x \leq 1 \\ & \text{tan}^{-1}x & x \leq 1 \\ & \text{tan}^{-1}x & x \leq 1 \times 10^{100} \\ & \text{sinh}^{x} & x \leq 230.2585092 \\ & \text{tanh}x & x \leq 230.2585092 \\ & \text{tanh}x & x \leq 5 \times 10^{99} \\ & \text{cosh}^{-1}x & x \leq 5 \times 10^{99} \\ & \text{tanh}^{-1}x & x \leq 1 \\ & \log x/\ln x & 1 \times 10^{-99} \leq x < 1 \times 10^{100} \\ & e^{x} & -1 \times 10^{100} < x < 100 \\ & e^{x} & -1 \times 10^{100} < x \leq 230.2585092 \\ & \sqrt{x} & 0 \leq x < 1 \times 10^{100} \\ & x^{2} & x < 1 \times 10^{90} \\ & x^{3} & x < 2.154434690 \times 10^{39} \\ & 1/x & x < 1 \times 10^{100} \\ & x^{1} & 0 \leq x \leq 69 \ (x \ is \ an \ integer) \\ & x^{1} & 0 \leq x \leq 69 \ (x \ is \ an \ integer) \\ & x^{1} & 0 \leq x \leq 69 \ (x \ is \ an \ integer) \\ & P \rightarrow R & (RAB) \theta < 5 \times 10^{7} \pi \ rad \\ & (GRA) \theta < 5 \times 10^{7} grad \\ & nput \ and \ Results: \\ & Total \ of \ hour, \ minutes, \ and \ seconds \ digits \ must \ be 10 \ or \ fewer \ (including \ separator \ symbols) \\ & Decimal \ \leftrightarrow Sexagesimal \ Conversions \ x \leq 2777777.777 \\ & x > 0: -1 \times 10^{100} < ylogx < 100 \\ & x = 0: y > 0 \ 1 \\ & x < 0: y = n; \ \frac{1}{2n+1} \ (n \ is \ an \ integer) \\ & However: -1 \times 10^{100} < 1/y \log x < 100 \\ & x = 0: y > 0 \ 1 \\ & x < 0: y = 2n + 1; \ \frac{1}{m} \ (m \neq 0; m \ and \ n \ are \ integers) \\ & However: -1 \times 10^{100} < 1/y \log x < 100 \\ & Total \ of \ integer, \ numerator, \ and \ denominator \end{aligned}$	Functions	input Range
$\begin{array}{c ccccccc} cos^{-1}x & x \leq 1 \\ \hline tan^{-1}x & x < 1 \times 10^{100} \\ \hline sinhx & x \leq 230.2585092 \\ \hline tanhx & x < 5 \times 10^{99} \\ \hline cosh^{-1}x & x < 5 \times 10^{99} \\ \hline cosh^{-1}x & x < 5 \times 10^{99} \\ \hline cosh^{-1}x & x < 1 \\ \hline logx/lnx & 1 \times 10^{-99} \leq x < 1 \times 10^{100} \\ \hline e^x & -1 \times 10^{100} < x < 100 \\ \hline e^x & -1 \times 10^{100} < x \leq 230.2585092 \\ \hline \sqrt{x} & 0 \leq x < 1 \times 10^{100} \\ \hline x^2 & x < 1 \times 10^{50} \\ \hline x^3 & x < 2.154434690 \times 10^{33} \\ \hline 1/x & x < 1 \times 10^{100} ; x \neq 0 \\ \hline \sqrt[3]{x} & x < 1 \times 10^{100} \\ \hline x! & 0 \leq x \leq 69 (x \text{ is an integer}) \\ \hline nPr/nCr & n < 1 \times 10^{10} \\ \hline n = & n < 1 \times 10^{100} \\ \hline p \rightarrow R & (RAD) \theta < 5 \times 10^{7}\pi \text{ rad} \\ \hline (GRA) \theta < 1 \times 10^{10} \text{ grad} \\ \hline lnput and Results: \\ \hline Total of hour, minutes, and seconds digits must be 10 or fewer (including separator symbols) \\ \hline Decimal \leftrightarrow Sexagesimal Conversions \\ \hline x \leq 2777777.777 \\ \hline x > 0: -1 \times 10^{100} < ylogx < 100 \\ \hline x^{-0}: y > 0 \\ \hline x < 0: y = n; \frac{1}{2n+1} (n \text{ is an integer}) \\ \hline x^{1/y} & x < 0: y \neq 0 \\ -1 \times 10^{100} < 1/y \log x < 100 \\ \hline x = 0: y > 0 \\ \hline x < 0: y = 2n+1; \frac{1}{m} (m \neq 0; m \text{ and } n \text{ are integers}) \\ \hline However: -1 \times 10^{100} < 1/y \log x < 100 \\ \hline \hline a b/c^{\star} & \text{Total of integer, numerator, and denominator must be 10 digits or less (including division) \\ \hline \end{array}$	cosx	(BAD) $ x < 9 \times 10^{-10}$ $ x \neq 90(2n+1)$:DEG
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		$ x \leq 1$
coshx $ x \le 230.2585092$ tanhx $ x < 1 \times 10^{100}$ sinh ⁻¹ x $ x < 5 \times 10^{99}$ cosh ⁻¹ x $1 \le x < 5 \times 10^{99}$ tanh ⁻¹ x $ x < 1$ logx/lnx $1 \times 10^{-99} \le x < 1 \times 10^{100}$ $10^x -1 \times 10^{100} < x < 100$ $e^x -1 \times 10^{100} < x \le 230.2585092$ $\sqrt{x} 0 \le x < 1 \times 10^{100}$ $x^2 x < 1 \times 10^{90}$ $x^3 x < 2.154434690 \times 10^{33}$ $1/x x < 1 \times 10^{100}$; $x \ne 0$ $\sqrt[3]{x} x < 1 \times 10^{100}$; $x \ne 0$ $\sqrt[3]{x} x < 1 \times 10^{100}$ $x! 0 \le x \le 69 (x \text{ is an integer})$ nPr/nCr $n< 1 \times 10^{10}$ ($n \text{ and } r \text{ are integers})$ $n \ge r \le n$ $n < 1 \times 10^{100}$ ($n \ge r \le n$ $n < 1 \times 10^{100}$ ($n \ge r \le n$ $n < 1 \times 10^{100}$ ($n \ge r \le n$ $n < 1 \times 10^{100}$ ($n \ge r \le n$ $n < 1 \times 10^{100}$ ($n \ge r \le n$ $n < 1 \times 10^{100}$ ($n \ge r \le n$ $n < 1 \times 10^{100}$ ($n \ge r \le n$ $n < 1 \times 10^{100}$ ($n \ge r \le n$ $n < 1 \times 10^{100}$ ($n \ge r \le n$ $n < 1 \times 10^{100}$ ($n \ge r \le n$ $n < 1 \times 10^{100}$ ($n \ge r \le n$ $n < 1 \times 10^{100}$ ($n \ge r \le n$ $n < 1 \times 10^{100}$ ($n \ge r \le n$ $n < 1 \times 10^{100}$ ($n \ge r \le n$ $n < 1 \times 10^{100}$ ($n \ge r \le n$ $n < 1 \times 10^{100}$ ($n \ge r \le n$ $n < 1 \times 10^{100}$ ($n \ge r \le n$ $n < 1 \times 10^{100}$ ($n \ge r \le n$ $n < 1 \times 10^{100}$ ($n \ge r \le n$ $n < 1 \times 10^{100}$ ($n \ge r \le n$ $n < 1 \times 10^{100}$ ($n \ge r \le n$ $n < 1 \times 10^{100}$ ($n \ge r \le n$ $n < 1 \times 10^{100}$ ($n \ge r \le n$ $n < 1 \times 10^{100}$ ($n \ge r \le n$ $n < 1 \times 10^{100}$ ($n \ge r \le n$ $n < 1 \times 10^{100}$ ($n \ge r \le n$ $n < 1 \times 10^{100}$ ($n \ge r \le n$ $n < 1 \times 10^{100}$ ($n \ge r \le n$ $n < 1 \times 10^{100}$ ($n \ge r \le n$ $n < 1 \times 10^{100}$ ($n \ge r \le n$ $n < 1 \times 10^{100}$ ($n \ge r \le n$ $n < 1 \times 10^{100}$ ($n \ge r \le n$ $n < 1 \times 10^{100}$ ($n \ge r \le n$ $n < 1 \times 10^{100}$ ($n \ge r \le n$ $n < 1 \times 10^{100}$ ($n \ge r \le n$ $n < 1 \times 10^{100}$ ($n \ge r \le n$ $n < 1 \times 10^{100}$ ($n \ge r \le n$ $n < 1 \times 10^{100}$ ($n \ge r \le n$ $n < 1 \times 10^{100}$ ($n \ge r \le n$ $n < 1 \times 10^{100}$ ($n \ge r \le n$ $n < 1 \times 10^{100}$ ($n \ge r \le n$ $n < 1 \times 10^{100}$ ($n \ge r \le n$ $n < 1 \times 10^{100}$ ($n \ge r \le n$ $n < 1 \times 10^{100}$ ($n \ge r \le n$ $n < 1 \times 10^{100}$ ($n \ge r \le n$		$ x < 1 \times 10^{100}$
$\begin{array}{c ccccccc} & \sin h^{-1}x & x < 5 \times 10^{99} \\ & \cosh^{-1}x & 1 \leq x < 5 \times 10^{99} \\ & \tanh^{-1}x & x < 1 \\ & \log x/\ln x & 1 \times 10^{-99} \leq x < 1 \times 10^{100} \\ & 10^x & -1 \times 10^{100} < x < 100 \\ & e^x & -1 \times 10^{100} < x \leq 230.2585092 \\ & \sqrt{x} & 0 \leq x < 1 \times 10^{100} \\ & x^2 & x < 1 \times 10^{50} \\ & x^3 & x < 2.154434690 \times 10^{33} \\ & 1/x & x < 1 \times 10^{100}; x \neq 0 \\ & \frac{3}{\sqrt{x}} & x < 1 \times 10^{100}; x \neq 0 \\ & \frac{3}{\sqrt{x}} & x < 1 \times 10^{100} \\ & x! & 0 \leq x \leq 69 \ (x \ is \ an \ integer) \\ & n P r/n C r & n < 1 \times 10^{10} \\ & (n \ and \ r \ are \ integers) \\ & R \rightarrow P & \sqrt{x^2 + y^2} < 1 \times 10^{100} \\ & (DEG) \ \theta < 9 \times 10^9 \\ & (RAD) \ \theta < 5 \times 10^7 \pi \ rad \\ & (GRA) \ \theta < 1 \times 10^{10} \ grad \\ & & \ln put \ and \ Results: \\ & & & & & & & & & & & & \\ & & & & & $		$ x \le 230.2585092$
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$tanh_X$	$ x < 1 \times 10^{100}$
$\begin{aligned} &\tanh^{-1}x x < 1 \\ &\log x/\ln x 1 \times 10^{-99} \le x < 1 \times 10^{100} \\ &10^x -1 \times 10^{100} < x < 100 \\ &e^x -1 \times 10^{100} < x \le 230.2585092 \\ &\sqrt{x} 0 \le x < 1 \times 10^{100} \\ &x^2 x < 1 \times 10^{50} \\ &x^3 x < 2.154434690 \times 10^{33} \\ &1/x x < 1 \times 10^{100}; x \ne 0 \\ &\frac{3}{\sqrt{x}} x < 1 \times 10^{100}; x \ne 0 \\ &x^1 0 \le x \le 69 \ (x \ is \ an \ integer) \\ &x! 0 \le x \le 69 \ (x \ is \ an \ integer) \\ &n < 1 \times 10^{10} \\ &(n \ and \ r \ are \ integers) \\ &R \rightarrow P \sqrt{x^2 + y^2} < 1 \times 10^{100} \\ &P \rightarrow R (DEG) \ \theta < 9 \times 10^9 \\ &(RAD) \ \theta < 5 \times 10^7 \pi \ rad \\ &(GRA) \ \theta < 1 \times 10^{10} \ grad \\ &\ln put \ and \ Results: \\ &Total \ of \ hour, \ minutes, \ and \ seconds \ digits \ must \ be \ 10 \ or \ fewer \ (including \ separator \ symbols) \\ &Decimal \ \leftrightarrow Sexage simal \ Conversions \ x \le 2777777.777 \\ &x > 0: -1 \times 10^{100} < y \log x < 100 \\ &x = 0: \ y > 0 \ 1 \\ &x < 0: \ y = n; \ \frac{1}{2n+1} \ (n \ is \ an \ integer) \\ &However: -1 \times 10^{100} < y \log x < 100 \\ &x > 0: \ y \ge 2n + 1; \ \frac{1}{m} \ (m \ne 0; \ m \ and \ n \ are \ integers) \\ &However: -1 \times 10^{100} < 1/y \ \log x < 100 \\ &x > 0: \ y = 2n + 1; \ \frac{1}{m} \ (m \ne 0; \ m \ and \ n \ are \ integers) \\ &However: -1 \times 10^{100} < 1/y \ \log x < 100 \\ &x > 0: \ y = 2n + 1; \ \frac{1}{m} \ (m \ne 0; \ m \ and \ denominator \ must \ be \ 10 \ digits \ or \ less(including \ division) \end{aligned}$	sinh ⁻¹ x	$ x < 5 \times 10^{99}$
logx/lnx 1× 10 ⁻⁹⁹ \leq x < 1 × 10 ¹⁰⁰ 10^x	$\cosh^{-1}x$	$1 \le x < 5 \times 10^{99}$
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$tanh^{-1}x$	x < 1
$\begin{array}{c cccc} e^x & -1 \times 10^{100} < x \le 230.2585092 \\ \hline \sqrt{x} & 0 \le x < 1 \times 10^{100} \\ \hline x^2 & x < 1 \times 10^{50} \\ \hline x^3 & x < 2.154434690 \times 10^{33} \\ \hline 1/x & x < 1 \times 10^{100}; x \ne 0 \\ \hline \sqrt[3]{x} & x < 1 \times 10^{100}; x \ne 0 \\ \hline \sqrt[3]{x} & x < 1 \times 10^{100} \\ \hline x! & 0 \le x \le 69 \ (x \ is \ an \ integer) \\ \hline nPr/nCr & n < 1 \times 10^{10} \\ (n \ and \ r \ are \ integers) \\ \hline R \rightarrow P & \sqrt{x^2 + y^2} < 1 \times 10^{100} \\ (DEG) \ \theta < 9 \times 10^9 \\ (RAD) \ \theta < 5 \times 10^7 \pi \ rad \\ (GRA) \ \theta < 1 \times 10^{10} \ grad \\ \hline & \ lnput \ and \ Results: \\ \hline Total \ of \ hour, \ minutes, \ and \ seconds \ digits \ must \ be \ 10 \ or \ fewer \ (including \ separator \ symbols) \\ Decimal \ \leftrightarrow Sexage simal \ Conversions \ x \le 2777777.777 \\ \hline & x > 0: \ -1 \times 10^{100} < y \log x < 100 \\ x = 0: \ y > 0 \ x < 0: \ y = n; \ \frac{1}{2n+1} \ (n \ is \ an \ integer) \\ However: \ -1 \times 10^{100} < y \log x < 100 \\ \hline & x > 0: \ y \ge 0 \ x < 0: \ y = 2n+1; \ \frac{1}{m} \ (m \ne 0; \ m \ and \ n \ are \ integers) \\ However: \ -1 \times 10^{100} < 1/y \ \log x < 100 \\ \hline & x > 0: \ y = 2n+1; \ \frac{1}{m} \ (m \ne 0; \ m \ and \ n \ are \ integers) \\ However: \ -1 \times 10^{100} < 1/y \ \log x < 100 \\ \hline & Total \ of \ integer, \ numerator, \ and \ denominator \ must \ be \ 10 \ digits \ or \ less(including \ division) \\ \hline \end{array}$	logx/lnx	$1 \times 10^{-99} \le x < 1 \times 10^{100}$
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	10 ^x	$-1 \times 10^{100} < x < 100$
$x^{2} \qquad x < 1 \times 10^{50}$ $x^{3} \qquad x < 2.154434690 \times 10^{33}$ $1/x \qquad x < 1 \times 10^{100}; x \neq 0$ $\sqrt[3]{x} \qquad x < 1 \times 10^{100}$ $x! \qquad 0 \leq x \leq 69 \ (x \text{ is an integer})$ $n > r / x = 1 $ $n > r / x^{2} + y^{2} < 1 \times 10^{100}$ $p \rightarrow R \qquad 0 \leq r < 1 \times 10^{100}$ $(p \rightarrow R) \qquad (p \rightarrow$	e^x	$-1 \times 10^{100} < x \le 230.2585092$
x^3 x < 2.154434690 × 10 ³³ 1/ x x < 1× 10 ¹⁰⁰ ; $x \ne 0$ $\sqrt[3]{x}$ x < 1× 10 ¹⁰⁰ ; $x \ne 0$ $x!$ $0 \le x \le 69$ (x is an integer) $x!$ $0 \le r \le n$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n < 1 \times 10^{10}$ $n <$	\sqrt{X}	$0 \le x < 1 \times 10^{100}$
1/x x < 1× 10 ¹⁰⁰ ; x ≠ 0 3√x x < 1× 10 ¹⁰⁰ x! 0≤ x ≤ 69 (x is an integer) $n P r / n C r$ $n < 1 × 1010$ $n < 1 × 1010$ $(n \text{ and } r \text{ are integers})$ $P → R$ $0≤ r < 1 × 10100$ $(DEG) \theta < 9 × 109$ $(RAD) \theta < 5 × 107 π \text{ rad}$ $(GRA) \theta < 1 × 1010 \text{ grad}$ Input and Results: Total of hour, minutes, and seconds digits must be 10 or fewer (including separator symbols) Decimal \leftrightarrow Sexagesimal Conversions $ x \le 2777777.777$ $x>0: -1 × 10100 < y \log x < 100$ x^y x^y $x>0: y>0$ $x<0: y=n; \frac{1}{2n+1} (n \text{ is an integer})$ However: -1 × 10 ¹⁰⁰ < y log x < 100 $x>0: y ≠ 0$ $-1 × 10100 < 1/y \log x < 100$ $x=0: y>0$ $x<0: y=2n+1; \frac{1}{m} (m ≠ 0; m \text{ and } n \text{ are integers})$ However: -1 × 10 ¹⁰⁰ < 1/y og x < 100 Total of integer, numerator, and denominator must be 10 digits or less (including division)	χ^2	$ x < 1 \times 10^{50}$
$x! \qquad x < 1 \times 10^{100}$ $x! \qquad 0 \le x \le 69 \ (x \text{ is an integer})$ $n P r / n C r \qquad 0 \le r \le n$ $n (1 \times 10^{10}) \qquad (n \text{ and } r \text{ are integers})$ $R \to P \qquad \sqrt{x^2 + y^2} < 1 \times 10^{100}$ $0 \le r < 1 \times 10^{100}$ $(DEG) \ \theta < 9 \times 10^9$ $(DEG) \ \theta < 9 \times 10^9$ $(RAD) \ \theta < 1 \times 10^{10} \text{ grad}$ $ nput \text{ and Results:}$ $1 \text{ total of hour, minutes, and seconds digits must be 10 or fewer (including separator symbols)}$ $Decimal \leftrightarrow S \text{exagesimal Conversions}$ $ x \le 2777777.777$ $x > 0: -1 \times 10^{100} < y \log x < 100$ $x = 0: y > 0 \qquad 1$ $x < 0: y = n; \frac{1}{2n+1} \ (n \text{ is an integer})$ $\text{However: } -1 \times 10^{100} < y \log x < 100$ $x > 0: y \ne 0$ $-1 \times 10^{100} < 1 / y \log x < 100$ $x < 0: y = 2n + 1; \frac{1}{m} \ (m \ne 0; m \text{ and } n \text{ are integers})$ $\text{However: } -1 \times 10^{100} < 1 / y \log x < 100$ $x = 0: y > 0 \qquad 1$ $x < 0: y = 2n + 1; \frac{1}{m} \ (m \ne 0; m \text{ and } n \text{ are integers})$ $\text{However: } -1 \times 10^{100} < 1 / y \log x < 100$ $x = 0: y > 0 \qquad 1$ $x < 0: y = 2n + 1; \frac{1}{m} \ (m \ne 0; m \text{ and } n \text{ are integers})$ $\text{However: } -1 \times 10^{100} < 1 / y \log x < 100$ $\text{Total of integer, numerator, and denominator must be 10 digits or less (including division)}$	χ^3	x < 2.154434690 × 10 ³³
$x! \qquad 0 \leq x \leq 69 \ (x \text{ is an integer})$ $n \text{Pr}/n \text{Cr} \qquad 0 \leq r \leq n \\ n < 1 \times 10^{10} \\ (n \text{ and } r \text{ are integers})$ $\text{R} \rightarrow \text{P} \qquad \sqrt{x^2 + y^2} < 1 \times 10^{100}$ $0 \leq r < 1 \times 10^{100} \\ (\text{DEG}) \ \theta < 9 \times 10^9 \\ (\text{RAD}) \ \theta < 5 \times 10^7 \pi \text{ rad}$ $(\text{GRA}) \ \theta < 1 \times 10^{10} \text{ grad}$ $\text{Input and Results:}$ $\text{Total of hour, minutes, and seconds digits must be 10 or fewer (including separator symbols)}$ $\text{Decimal} \leftrightarrow \text{Sexagesimal Conversions}$ $ x \leq 2777777.777$ $x > 0: -1 \times 10^{100} < y \log x < 100$ $x = 0: y > 0 1 \\ x < 0: y = n; \frac{1}{2n+1} \ (n \text{ is an integer})$ $\text{However: } -1 \times 10^{100} < y \log x < 100$ $x > 0: y \neq 0$ $-1 \times 10^{100} < 1/y \log x < 100$ $x > 0: y \geq 0 1 \\ x < 0: y = 2n+1; \frac{1}{m} \ (m \neq 0; m \text{ and } n \text{ are integers})$ $\text{However: } -1 \times 10^{100} < 1/y \log_{x} x < 100$ $\text{Total of integer, numerator, and denominator must be 10 digits or less (including division)}$	1 / <i>x</i>	$ x < 1 \times 10^{100}; x \neq 0$
$n \Pr/n Cr \qquad 0 \le r \le n \\ n < 1 \times 10^{10} \\ (n \text{ and } r \text{ are integers})$ $R \to P \qquad \sqrt{x^2 + y^2} < 1 \times 10^{100}$ $0 \le r < 1 \times 10^{100} \\ (DEG) \theta < 9 \times 10^9 \\ (RAD) \theta < 5 \times 10^7 \pi \text{ rad} \\ (GRA) \theta < 1 \times 10^{10} \text{ grad}$ $\text{Input and Results:} \\ \text{Total of hour, minutes, and seconds digits must be 10 or fewer (including separator symbols)} \\ \text{Decimal} \leftrightarrow \text{Sexagesimal Conversions} \\ x \le 2777777.777$ $x > 0: -1 \times 10^{100} < y \log x < 100$ $x^y \qquad x > 0: -1 \times 10^{100} < y \log x < 100$ $x = 0: y > 0 \qquad 1 \qquad x < 0: y = n; \frac{1}{2n+1} (n \text{ is an integer})$ $\text{However: } -1 \times 10^{100} < y \log x < 100$ $x > 0: y \ne 0 \qquad -1 \times 10^{100} < 1/y \log x < 100$ $x > 0: y \ge 0 \qquad 1 \qquad (m \ne 0; m \text{ and } n \text{ are integers})$ $\text{However: } -1 \times 10^{100} < 1/y \log x < 100$ $\text{Total of integer, numerator, and denominator must be 10 digits or less (including division)}$	³ √ <i>X</i>	$ x < 1 \times 10^{100}$
nPr/nCr $n<1\times10^{10}$ $(n \text{ and } r \text{ are integers})$ R→P $\sqrt{x^2+y^2}<1\times10^{100}$ 0≤ $r<1\times10^{100}$ $(DEG) \theta <9\times10^9$ $(DEG) \theta <5\times10^7\pi \text{ rad}$ $(GRA) \theta <1\times10^{10} \text{ grad}$ Input and Results: Total of hour, minutes, and seconds digits must be 10 or fewer (including separator symbols) Decimal \leftrightarrow Sexagesimal Conversions $ x \le 2777777.777$ $x>0: -1 \times 10^{100} < y\log x < 100$ x^y $x<0: y>0$ $x<0: y>0$ $x<0: y>0$ $x<0: y>0 x<0: y>0 $	x!	$0 \le x \le 69$ (x is an integer)
P \rightarrow R $ \begin{array}{l} 0 \leq r < 1 \times 10^{100} \\ (\mathrm{DEG}) \ \theta < 9 \times 10^{9} \\ (\mathrm{RAD}) \ \theta < 5 \times 10^{7} \pi \ \mathrm{rad} \\ (\mathrm{GRA}) \ \theta < 1 \times 10^{10} \ \mathrm{grad} \\ \end{array} $ $ \begin{array}{l} \text{Input and Results:} \\ \text{Total of hour, minutes, and seconds digits must be 10 or fewer (including separator symbols)} \\ \mathrm{Decimal} \leftrightarrow \mathrm{Sexagesimal Conversions} \\ x \leq 2777777.777 \\ x > 0: -1 \times 10^{100} < y \log x < 100 \\ x = 0: y > 0 \\ x < 0: y = n; \frac{1}{2n+1} \ (n \ \mathrm{is \ an \ integer}) \\ \mathrm{However:} -1 \times 10^{100} < y \log x < 100 \\ x > 0: y \neq 0 \\ -1 \times 10^{100} < 1/y \log x < 100 \\ x = 0: y > 0 \\ x < 0: y = 2n+1; \frac{1}{m} \ (m \neq 0; m \ \mathrm{and} \ n \ \mathrm{are \ integers}) \\ \mathrm{However:} -1 \times 10^{100} < 1/y \log_{ x } < 100 \\ \end{array} $	nPr/nCr	$n < 1 \times 10^{10}$ (<i>n</i> and <i>r</i> are integers)
P \rightarrow R $(DEG) \theta < 9 \times 10^9 \ (RAD) \theta < 5 \times 10^7 \pi \text{ rad} \ (GRA) \theta < 1 \times 10^{10} \text{ grad}$ Input and Results: Total of hour, minutes, and seconds digits must be 10 or fewer (including separator symbols) Decimal \leftrightarrow Sexagesimal Conversions $ x \leq 2777777.777$ $x > 0: -1 \times 10^{100} < y \log x < 100$ $x = 0: y > 0$ 1 $x < 0: y = n; \frac{1}{2n+1} (n \text{ is an integer})$ However: $-1 \times 10^{100} < y \log x < 100$ $x > 0: y \neq 0$ $-1 \times 10^{100} < 1/y \log x < 100$ $x > 0: y > 0$ $x < 0: y = 1; \frac{1}{m} (m \neq 0; m \text{ and } n \text{ are integers})$ However: $-1 \times 10^{100} < 1/y \log x < 100$ Total of integer, numerator, and denominator must be 10 digits or less (including division)	R→P	$\sqrt{x^2 + y^2} < 1 \times 10^{100}$
Total of hour, minutes, and seconds digits must be 10 or fewer (including separator symbols) $\begin{array}{lll} \text{Decimal} \leftrightarrow \text{Sexagesimal Conversions} \\ x \leq 2777777.777 \\ & x > 0: -1 \times 10^{100} < y \text{log}x < 100 \\ & x = 0: y > 0 & 1 \\ & x < 0: y = n; & \frac{1}{2n+1} \ (n \text{ is an integer}) \\ & \text{However: } -1 \times 10^{100} < y \text{log} x < 100 \\ & x > 0: y \neq 0 \\ & -1 \times 10^{100} < 1/y \ \text{log}x < 100 \\ & x < 0: y > 0 & 1 \\ & x < 0: y > 0 & 1 \\ & x < 0: y > 0 & 1 \\ & x < 0: y > 0 & 1 \\ & x < 0: y < 0 < 1/y \ \text{log} x < 100 \\ & x < 0: y < 0 < 1/y \ \text{log} x < 100 \\ & x < 0: y < 0 < 1/y \ \text{log} x < 100 \\ & x < 0: y < 0 < 1/y \ \text{log} x < 100 \\ & x < 0: y < 0 < 1/y \ \text{log} x < 100 \\ & x < 0: y < 0 < 1/y \ \text{log} x < 100 \\ & x < 0: y < 0 < 1/y \ \text{log} x < 100 \\ & x < 0: y < 0 < 1/y \ \text{log} x < 100 \\ & x < 0: y < 0 < 1/y \ \text{log} x < 100 \\ & x < 0: y < 0 < 1/y \ \text{log} x < 100 \\ & x < 0: y < 0 < 1/y \ \text{log} x < 100 \\ & x < 0: y < 0 < 1/y \ \text{log} x < 100 \\ & x < 0: y < 0 < 1/y \ \text{log} x < 100 \\ & x < 0: y < 0 < 1/y \ \text{log} x < 100 \\ & x < 0: y < 0 < 1/y \ \text{log} x < 100 \\ & x < 0: y < 0 < 1/y \ \text{log} x < 100 \\ & x < 0: y < 0 < 1/y \ \text{log} x < 100 \\ & x < 0: y < 0 < 1/y \ \text{log} x < 100 \\ & x < 0: y < 0 < 1/y \ \text{log} x < 100 \\ & x < 0: y < 0 < 1/y \ \text{log} x < 100 \\ & x < 0: y < 0 < 1/y \ \text{log} x < 100 \\ & x < 0: y < 0 < 1/y \ \text{log} x < 100 \\ & x < 0: y < 0 < 1/y \ \text{log} x < 100 \\ & x < 0: y < 0 < 1/y \ \text{log} x < 100 \\ & x < 0: y < 0 < 1/y \ \text{log} x < 100 \\ & x < 0: y < 0 < 1/y \ \text{log} x < 100 \\ & x < 0: y < 0 < 1/y \ \text{log} x < 100 \\ & x < 0: y < 0 < 1/y \ \text{log} x < 100 \\ & x < 0: y < 0 < 1/y \ \text{log} x < 100 \\ & x < 0: y < 0 < 1/y \ \text{log} x < 100 \\ & x < 0: y < 0 < 1/y \ \text{log} x < 100 \\ & x < 0: y < 0 < 1/y \ \text{log} x < 100 \\ & x < 0: y < 0 < 1/y \ \text{log} x < 100 \\ & x < 0: y < 0 < 1/y \ \text{log} x < 100 \\ & x < 0: y < 0 < 1/y \ \text{log} x < 100 \\ & x < 0: y < 0 < 1/y \ \text{log} x < 100 \\ & x < 0: y < 0 < $	P→R	$ \text{(DEG)} \theta < 9 \times 10^9 \ \text{(RAD)} \theta < 5 \times 10^7 \pi \text{ rad}$
x^{y} $x=0: y>0$ $x<0: y=n; \frac{1}{2n+1} (n \text{ is an integer})$ However: $-1\times 10^{100} < y\log x < 100$ $x>0: y\neq 0$ $-1\times 10^{100} < 1/y \log x < 100$ $x=0: y>0$ $x<0: y=2n+1; \frac{1}{m} (m\neq 0; m \text{ and } n \text{ are integers})$ However: $-1\times 10^{100} < 1/y \log x < 100$ Total of integer, numerator, and denominator must be 10 digits or less(including division)	O3 33	Total of hour, minutes, and seconds digits must be 10 or fewer (including separator symbols) Decimal \leftrightarrow Sexagesimal Conversions $ x \le 2777777.777$
$x^{1/y} = \begin{cases} -1 \times 10^{100} < 1/y \log x < 100 \\ x = 0: \ y > 0 \\ x < 0: \ y = 2n + 1; \frac{1}{m} \ (m \neq 0; \ m \ \text{and} \ n \ \text{are integers}) \\ \text{However:} \ -1 \times 10^{100} < 1/y \log x < 100 \end{cases}$ Total of integer, numerator, and denominator must be 10 digits or less (including division	x^{y}	x=0: y>0 $x<0: y=n; \frac{1}{2n+1} (n \text{ is an integer})$
a^{b}/c^{\star} Total of integer, numerator, and denominator must be 10 digits or less(including division	x ^{1/y}	$-1 \times 10^{100} < 1/y \log x < 100$ x = 0: $y > 0x < 0: y = 2n + 1; \frac{1}{m} (m \ne 0; m \text{ and } n \text{ are integers})$
	a ^b /c*	Total of integer, numerator, and denominator must be 10 digits or less(including division



* fx-82SOLAR II/fx-260SOLAR II only

 For a single calculation, calculation error is ±1 at the 10th digit. (In the case of exponential display, calculation error is ±1 at the last significant digit.) Errors are cumulative in the case of consecutive calculations, which can also cause them to become large. (This is also true of internal consecutive calculations that are performed in the case of $x^{y}, x^{1/y}, x!, \sqrt[3]{x}, nPr, nCr, etc.$

In the vicinity of a function's singular point and point of inflection, errors are cumulative and may become large.

Calculation Capacity:

 Input/Basic Calculations 10-digit mantissa; or 10-digit mantissa plus 2-digit exponent up to 10±99

■ Specifications

Power Supply: Solar cell

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

Dimensions: 9 (H) \times 70.5 (W) \times 121.5 (D) mm 3/8" (H) $\times 2-3/4$ " (W) $\times 4-3/4$ " (D)

Weight: 55g (1.9oz)



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