

例 / Example	操作 / Operation	表示 / Display
割引計算 / Discount Calculation 200 - (200 x 20%) = 160	$200 - (200 \times 20\%) = 160$	160.

メモリ計算 / Memory Calculations

例 / Example	操作 / Operation	表示 / Display
独立メモリ計算 / Independent Memory Calculation		
20 x 30 = 600	$20 \times 30 = 600$	M 600.
40 x 50 = 2000	$40 \times 50 = 2000$	M 2000.
+) 15 x 20 = 300	$15 \times 20 = 300$	M 300.
2900	2900	M 2900.
-) 125 x 40 = -5000	$125 \times 40 = -5000$	M 5000.
-2100	-2100	M -2100.
		0.
変数メモリ計算 / Memory Variable Calculation		
9 x 6 + 3 = 57	$9 \times 6 + 3 = 57$	57.
x) 5 x 8 = 40	$5 \times 8 = 40$	40.
		57.
		40.
2,280		2280.

2. 2進、8進、16進演算 / Binary, Octal, Hexadecimal Calculations

2進演算 / Binary Calculations

例 / Example	操作 / Operation	表示 / Display
加算・減算 / Addition and Subtraction (BIN):		
10101011 + 1100 + 1110 = 11000101	$10101011 + 1100 + 1110 = 11000101$	11000101.
11100011 - 10101100 = 110111	$11100011 - 10101100 = 110111$	110111.
乗算・除算 / Multiplication and Division (BIN):		
11 x 1001 = 11011	$11 \times 1001 = 11011$	11011.
1101110 ÷ 1010 = 1011	$1101110 \div 1010 = 1011$	1011.

8進演算 / Octal Calculations

例 / Example	操作 / Operation	表示 / Display
加算・減算 / Addition and Subtraction (OCT):		
654 + 321 = 1175	$654 + 321 = 1175$	1175.
741 - 357 = 362	$741 - 357 = 362$	362.
乗算・除算 / Multiplication and Division (OCT):		
56 x 23 = 1552	$56 \times 23 = 1552$	1552.
621 ÷ 12 = 50	$621 \div 12 = 50$	50.
四則混合計算 / Mixed Calculations (OCT):		
52 + 63 x 14 = 1216	$52 + 63 \times 14 = 1216$	1216.

16進演算 / Hexadecimal Calculations

例 / Example	操作 / Operation	表示 / Display
加算・減算 / Addition and Subtraction (HEX):		
AAA + BB + C = B71	$AAA + BB + C = B71$	b71.
DEF - EFE = FFFFFFFE1	$DEF - EFE = FFFFFFFE1$	FFFFFFFE1.
乗算・除算 / Multiplication and Division (HEX):		
FEDC x A9 = A83F3C	$FEDC \times A9 = A83F3C$	A83F3C.
CA11 ÷ DF = E7	$CA11 \div DF = E7$	E7.
四則混合計算 / Mixed Calculations (HEX):		
(AB + 9) x D ÷ F = 9C	$(AB + 9) \times D \div F = 9C$	9C.

3. 基本関数計算 / Basic Function Calculations

π関数 / Pi Function: π

例 / Example	操作 / Operation	表示 / Display
π x 10	$\pi \times 10$	31.41592654

三角関数、逆三角関数 / Trigonometric Functions, Inverse Trigonometric Functions:

例 / Example	操作 / Operation	表示 / Display
三角関数 / Trigonometric Functions:		
sin53 = 0.79863551	$\sin 53 = 0.79863551$	0.79863551
cos 53° = 0.866025403	$\cos 53^\circ = 0.866025403$	0.866025403
tan65° = 1.631851687	$\tan 65^\circ = 1.631851687$	1.631851687
逆三角関数 / Inverse Trigonometric Functions:		
sin ⁻¹ 0.3 = 17.45760312°	$\sin^{-1} 0.3 = 17.45760312^\circ$	17.45760312
cos ⁻¹ 0.8 = 36.86989765°	$\cos^{-1} 0.8 = 36.86989765^\circ$	36.86989765
tan ⁻¹ 1.5 = 56.30993247°	$\tan^{-1} 1.5 = 56.30993247^\circ$	56.30993247

対数関数、対数平均、指数関数 / Logarithmic Functions, Logarithmic Mean, Exponential Functions:

例 / Example	操作 / Operation	表示 / Display
対数関数 / Logarithmic Functions:		
log123 = 2.089905111	$\log 123 = 2.089905111$	2.089905111
ln123 = 4.812184355	$\ln 123 = 4.812184355$	4.812184355
対数平均 / Logarithmic Mean:		
L = $\frac{4-8}{\ln 4 - \ln 8} = 5.770780164$	$L = \frac{4-8}{\ln 4 - \ln 8} = 5.770780164$	5.770780164
指数関数 / Exponential Functions:		
e ²² = 3584912846	$e^{22} = 3584912846$	3584912846
10 ^{2.3} = 199.5262315	$10^{2.3} = 199.5262315$	199.5262315

累乗、ルート、双曲線 / Powers, Roots, Hyperbolic Functions:

例 / Example	操作 / Operation	表示 / Display
平方計算 / Square Calculations:		
1.25 ² = 1.5625	$1.25^2 = 1.5625$	1.5625
立方計算 / Cubic Calculations:		
5.43 ³ = 160.103007	$5.43^3 = 160.103007$	160.103007
累乗計算 / Power Calculations:		
2.11 ⁵ = 41.82272021	$2.11^5 = 41.82272021$	41.82272021
定数乗計算 / Constant Power Calculations:		
2 ^{2.34} = 5.063026376	$2^{2.34} = 5.063026376$	5.063026376
3 ^{2.34} = 13.07566351	$3^{2.34} = 13.07566351$	13.07566351
4 ^{2.34} = 25.63423608	$4^{2.34} = 25.63423608$	25.63423608
開平 / Extraction of Square Root:		
$\sqrt{(5+6) \times 7} = 8.774964387$	$\sqrt{(5+6) \times 7} = 8.774964387$	8.774964387
重解 / Multiple Root:		
$\sqrt[5]{100} = 2.384286779$	$\sqrt[5]{100} = 2.384286779$	2.384286779
定数ルート計算 / Constant Multiple Root Calculations:		
$\sqrt[5]{1024} = 4$	$\sqrt[5]{1024} = 4$	4.
$\sqrt[5]{3125} = 5$	$\sqrt[5]{3125} = 5$	5.
$\sqrt[5]{7776} = 6$	$\sqrt[5]{7776} = 6$	6.
幾何平均 / Geometric Mean:		
$\bar{G} = \sqrt[4]{1.23 \times 1.48 \times 1.96 \times 2.2} = 1.673830182$	$\bar{G} = \sqrt[4]{1.23 \times 1.48 \times 1.96 \times 2.2} = 1.673830182$	1.673830182
開立 / Extraction of Cubic Root:		
$\sqrt[3]{123} = 4.973189833$	$\sqrt[3]{123} = 4.973189833$	4.973189833
逆数計算 / Reciprocal Calculations:		
$\frac{1}{2 \times 3 + 4} = 0.1$	$\frac{1}{2 \times 3 + 4} = 0.1$	0.1
三角法計算 / Trigonometric Calculations:		
cosec x = 1/sin x cosec 45° = 1.414213562	$\text{cosec } x = 1/\sin x$ $\text{cosec } 45^\circ = 1.414213562$	1.414213562
階乗計算 / Factorial Calculations:		
(4 x 2 - 3)! = 120	$(4 \times 2 - 3)! = 120$	120.
双曲線関数 / Hyperbolic Functions:		
cosh34 = 2.917308713 x 10 ¹⁴	$\cosh 34 = 2.917308713 \times 10^{14}$	2.917308713 ¹⁴
tanh1.23 = 0.842579325	$\tanh 1.23 = 0.842579325$	0.842579325

角度単位変換 / Angle Unit Conversion

例 / Example	操作 / Operation	表示 / Display
ディグリー → ラジアン変換 / Degree → Radian Conversion:		
60° = 1.047197551 ^{RAD}	$60^\circ = 1.047197551^{\text{RAD}}$	1.047197551
ラジアン → グレード変換 / Radian → Gradient Conversion:		
2 ^{RAD} = 127.3239545 ^{GRAD}	$2^{\text{RAD}} = 127.3239545^{\text{GRAD}}$	127.3239545
グレード → ディグリー変換 / Gradient → Degree Conversion:		
120 ^{GRAD} = 108	$120^{\text{GRAD}} = 108$	108.

順列、組み合わせ / Permutations, Combinations

例 / Example	操作 / Operation	表示 / Display
順列 (n 個のものから r 個のものを同時に取り出したとき) / Permutations (of n things taken r at a time):		
$nPr = \frac{n!}{(n-r)!}$ 5 ^P 3 = $\frac{5!}{(5-3)!} = 60$	$5^{\text{P}}3 = \frac{5!}{(5-3)!} = 60$	60.
組み合わせ (n 個のものから r 個のものを同時に取り出したとき) / Combinations (of n things taken r at a time):		
$nCr = \frac{n!}{r!(n-r)!}$ 5 ^C 3 = $\frac{5!}{3!(5-3)!} = 10$	$5^{\text{C}}3 = \frac{5!}{3!(5-3)!} = 10$	10.

座標変換 / Coordinates Conversion

例 / Example	操作 / Operation	表示 / Display
直交 → 極変換 / Rectangular → Polar Conversion:		
$(x, y) = (1, \sqrt{3})$ r = 2 θ = 60°	$(x, y) = (1, \sqrt{3})$ r = 2 θ = 60^\circ	2. 60.
極 → 直交変換 / Polar → Rectangular Conversion:		
$(r, \theta) = (2, 60^\circ)$ x = 1 y = $\sqrt{3}$	$(r, \theta) = (2, 60^\circ)$ x = 1 y = $\sqrt{3}$	1. 1.732050808

度分秒計算 / Degrees-Minutes-Seconds Calculations:

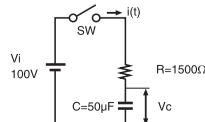
例 / Example	操作 / Operation	表示 / Display
度分秒 (DMS) → 10進ディグリー / Degrees-Minutes-Seconds (DMS) → Decimal Degrees:		
123°45'06" → 123.7516667°	$123^\circ 45' 06'' \rightarrow 123.7516667^\circ$	123.7516667
10進ディグリー → 度分秒 / Decimal Degrees → Degrees-Minutes-Seconds:		
2.3456 → 2°20'44.16"	$2.3456 \rightarrow 2^\circ 20' 44.16''$	2°20'44"16

4. 応用計算 / Applied Calculations

電気 - 積分回路 / Electricity - Integrating Circuit Problem:

JP スイッチを入れた後の、t=56ms でのコンデンサの電圧Vcを計算します。

EN Obtain the voltage Vc across the capacitor at t=56ms after the switch is turned on.



例 / Example	操作 / Operation	表示 / Display
$V_c = V_i (1 - e^{-\frac{t}{RC}})$ $= 100 \times (1 - e^{-\frac{56 \times 10^{-3}}{1500 \times 50 \times 10^{-6}}})$ $= 52.60562649$	$100 \times (1 - e^{-\frac{56 \times 10^{-3}}{1500 \times 50 \times 10^{-6}}}) = 52.60562649$	52.60562649

代数 / Algebra:

JP 二次方程式の解(実数解を持つ問題に限る。)

EN The Root of a Quadratic Equation (Only for problems having a real root)

例 / Example	操作 / Operation	表示 / Display
$4x^2 + 9x + 2 = 0$ $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} = \frac{-9 \pm \sqrt{9^2 - 4 \times 4 \times 2}}{2 \times 4}$ $x = \begin{cases} -0.25 \\ -2 \end{cases}$	$4x^2 + 9x + 2 = 0$ $x = \frac{-9 \pm \sqrt{9^2 - 4 \times 4 \times 2}}{2 \times 4}$ $x = \begin{cases} -0.25 \\ -2 \end{cases}$	M 49. M -0.25 M -2.

時間の計算 / Calculation of time:

例題 1: / Example 1:

JP 航空機の出発時刻が2時9分56秒(2°09'56")で、到着時刻が4時18分23秒(4°18'23")であるときの移動時間は?

EN The air flight departs at 2 o'clock 9 minutes and 56 seconds (2°09'56"), and arrives at 4 o'clock 18 minutes and 23 seconds (4°18'23"). What is the travel time?

例 / Example	操作 / Operation	表示 / Display
4°18'23" - 2°09'56" = 2°08'27"	$4^\circ 18' 23'' - 2^\circ 09' 56'' = 2^\circ 08' 27''$	2°8'27"

例題 2: / Example 2:

JP 以下は、3日間の労働時間を示しています。総労働時間は?

EN The following shows the amount of time worked in three days. What was the total time?

1日目: 5時間46分 / 1st day: 5 hours 46 minutes (5°46')

2日目: 4時間39分 / 2nd day: 4 hours 39 minutes (4°39')

3日目: 3時間55分 / 3rd day: 3 hours 55 minutes (3°55')

例 / Example	操作 / Operation	表示 / Display
5°46' + 4°39' + 3°55' = 14°20'	$5^\circ 46' + 4^\circ 39' + 3^\circ 55' = 14^\circ 20'$	14°20'0"

5. 演算範囲および精度 / Operation Range and Accuracy

JP 内部桁数: 14

精度*: 10桁目±1

入力範囲: 0 ≤ |x| ≤ 9.999999999 x 10⁹⁹

出力範囲: 1 x 10⁻⁹⁹ から ±9.999999999 x 10⁹⁹

EN Internal digits: 14

Accuracy*: ±1 at the 10th digits

Input Ranges: 0 ≤ |x| ≤ 9.999999999 x 10⁹⁹

Output Ranges: 1 x 10⁻⁹⁹ to ±9.999999999 x 10⁹⁹

関数 / Function	モード	入力 / Input
sin x	DEG	0 ≤ x < 4.5 x 10 ¹⁰⁰
	RAD	0 ≤ x ≤ 785398163.3
	GRAD	0 ≤ x < 5 x 10 ¹⁰
cos x	DEG	0 ≤ x < 4.5 x 10 ¹⁰⁰
	RAD	0 ≤ x ≤ 785398163.3
tan x	DEG	x = 90 (2n-1) のときを除いて、sin x と同じ / Same as sin x except x = 90 (2n-1)
	GRAD	x = 100 (2n-1) のときを除いて、sin x と同じ / Same as sin x except x = 100 (2n-1)
sin ⁻¹ x, cos ⁻¹ x		0 ≤ x ≤ 1
tan ⁻¹ x, tanh x		0 ≤ x < 1 x 10 ¹⁰⁰
sinh x, cosh x		0 ≤ x ≤ 230.2585092
		x=0のとき、sinh と tanh は、ある条件下ではエラーになる可能性が高くなり、精度に影響します。When x=0, sinh and tanh, being in some condition, will have more possibility of error, and influence accuracy.
sinh ⁻¹ x, cosh ⁻¹ x		0 ≤ x < 5 x 10 ⁹⁹ 1 ≤ x < 5 x 10 ⁹⁹
tanh ⁻¹ x		0 ≤ x < 0.999999999 x 10 ⁻¹
ln x, log x		0 < x < 1 x 10 ¹⁰⁰
10 ^x		-1 x 10 ¹⁰⁰ < x ≤ 99.99999999
e ^x		-1 x 10 ¹⁰⁰ < x ≤ 230.2585092
\sqrt{x}		0 ≤ x < 1 x 10 ¹⁰⁰
x ²		0 ≤ x < 1 x 10 ⁵⁰
x ⁻¹		1 x 10 ⁻⁹⁹ < x < 1 x 10 ¹⁰⁰ , x ≠ 0
$\sqrt[3]{x}$		0 ≤ x < 1 x 10 ¹⁰⁰
x!		0 ≤ x ≤ 69 (x は整数 / x is integer)
x ³		0 ≤ x ≤ 2.154434689 x 10 ³³
nPr, nCr		0 ≤ n ≤ 999999999 (r と n は整数 / r and n are integer) 結果 / result < 1 x 10 ¹⁰⁰
x ^y		-1 x 10 ¹⁰⁰ < y · ln x ≤ 230.2585092 x>0...上記の範囲 x<0...y (整数)または、1/y (奇関数、y ≠ 0)...上記の範囲 x=0...0<y x>0...The above range x<0...y (integer) or, 1/y (odd, y ≠ 0) ... The above range x=0...0<y
x ^{1/y}		-1 x 10 ¹⁰⁰ < 1/y · ln x ≤ 230.2585092 x>0...上記の範囲 x<0...y (奇関数)または、1/y (整数、y ≠ 0)...上記の範囲 x=0...0<y x>0...The above range x<0...y (odd) or, 1/y (integer, y ≠ 0) ... The above range x=0...0<y
R → P (X, Y → r, θ)		x , y < 1 x 10 ¹⁰⁰ (x ² +y ²) ^{1/2} < 1