

Canon

F-789SGA

Calculation Examples

Exemples de Calcul

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
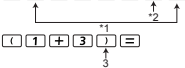
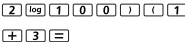
Hesaplama örnekleri

ENGLISH
FRANÇAIS
РУССКИЙ
MAGYAR
POLSKI
ROMÂNĂ
ČESKÁ VERZE
БЪЛГАРСКИ
SLOVENŠČINA
HRVATSKI
SLOVENSKY
TÜRK






E-IM-2808

EX #1

Example 	Key In Operation 	Display 
Including X *1,) *2,) *3	$2 \text{ X } \log 1 0 0 \text{) X } (1 + 3 \text{) } =$ 	$2 \times \log(100) \times (1+3)$ 16
Omitting X *1,) *3	$2 \log 1 0 0 \text{) } (1 + 3 \text{) } =$ 	$2 \log(100)(1+3)$ 16








EX #2

LINE MODE: ☐ Shift ☐ SET-UP ☐ 2

Mode Setting 	Key In operation 	Display (input Line only) 
Method 1: Insert mode	1234567 + 889900 < 7 times	12345671+889900
	DEL 0	12345601+889900
Method 2: Overwrite mode	Shift <input type="checkbox"/> SET-UP <input type="checkbox"/> 2 1234567 + 889900 Shift <input type="checkbox"/> Insert <input type="checkbox"/>	1234567+889900_
	< 8 times	123456Z+889900
	0	1234560+889900






EX #3

LINE MODE: ☐ Shift ☐ SET-UP ☐ 2

Mode Setting 	Key In operation 	Display 
Method 1:	 12times	12 34567+889900
Insert mode		1 34567+889900
Method 2:	Shift <input type="checkbox"/> Insert <input type="checkbox"/>	1234567+889900_
Overwrite mode	 13times	1 <u>2</u> 34567+889900
		1 <u>3</u> 4567+889900














EX #4

MATHEMATICS MODE: ☐ Shift ☐ SET-UP ☐ 1

Mode Setting 	Key In operation 	Display 
Insert mode	 6times	1234567+ 889900
		1234567+2 889900

EX #5

MATHEMATICS MODE: ☐ Shift ☐ SET-UP ☐ 1

Example 	Key in operation 	Display 
$\left \sqrt{3} - \frac{2}{\sqrt{2}} \right $	         	$\left \sqrt{3} - \frac{2}{\sqrt{2}} \right $ $\sqrt{3} - \sqrt{2}$

EX #6**Calculation Precision, Input Range /
Calcul de précision, plages des valeurs**

d'entrée / Расчет точности, Входной диапазон /
 Számítási pontosság, Bemeneti tartomány / Precyzyjnych
 obliczeń, Zakres wejściowy / Precizie de calcul, Gama de
 intrare / Výpočet Precision, vstupní rozsah / Изчисляване
 на точност, обхват на входното / Izračun Precision,
 Območje vhodnih podatkov / Proračun precizni, ulaznog
 raspona / Proračun precizni, ulaznog raspona / Calculation
 Precision, Input Range

E	Number of Digits for Internal Calculation Precision*	18 digits ±1 at the 10 th digit for a single calculation ±1 at the least significant for exponential display
	Calculation Range	±1 × 10 ⁻⁹⁹ to ±9.999999999 × 10 ⁹⁹ or 0
F	Nombre de chiffres pour les calculs internes	18 chiffres
	Précision*	±1 sur le dixième chiffre pour un calcul unique ±1 sur le dernier chiffre significatif pour l'affichage exponentiel
	Plage de calcul	±1 × 10 ⁻⁹⁹ à ±9.999999999 × 10 ⁹⁹ ou 0
RU	Количество разрядов во внутреннем вычислении	18 цифры
	Точность*	±1 в 10-м знаке для одного вычисления ±1 в последней значащей цифре для экспоненциального отображения
	Диапазон вычислений	±1 × 10 ⁻⁹⁹ à ±9.999999999 × 10 ⁹⁹ или 0
HU	Belső számítások számjegyeinek száma	18 számjegy
	Pontosság*	±1 a 10. számjegynél, egyetlen számítás esetében ±1 a legkevesbé értékes számjegynél, exponenciális kijelzés esetében
	Számítási tartomány	±1 × 10 ⁻⁹⁹ to ±9.999999999 × 10 ⁹⁹ vagy 0
PL	Liczba cyfr w wewnętrznych obliczeniach	18 cyfr
	Dokładność*	±1 10-tej cyfry w przypadku obliczeń pojedynczych ±1 ostatniej znaczącej cyfry w przypadku obliczeń wykładniczych
	Zakres obliczeń	±1 × 10 ⁻⁹⁹ a ±9.999999999 × 10 ⁹⁹ lub 0

RO	Numărul de cifre pentru calcul intern Precizie*	18 cifre ± 1 la a 10-a cifră pentru un singur calcul ± 1 la ultima cifră semnificativă pentru afișarea exponențială
	Interval de calcul	$\pm 1 \times 10^{-99}$ tot $\pm 9.999999999 \times 10^{99}$ sau 0
CZ	Počet číslic pro interní výpočet Přesnost*	18 číslice ± 1 na místě 10. číslice u jednoho výpočtu ± 1 na místě poslední platné číslice u exponenciálního zobrazení
	Rozsah výpočtu	$\pm 1 \times 10^{-99}$ til $\pm 9.999999999 \times 10^{99}$ nebo 0
BG	Брой цифри за вътрешни изчисления Точност*	18 цифри ± 1 при 10тата цифра на единично изчисление ± 1 на последната значима цифра при експоненциално представяне
	Диапазон на изчисление	$\pm 1 \times 10^{-99}$ to $\pm 9.999999999 \times 10^{99}$ или 0
SL	Število znakov notranjega izračuna Natančnost*	18 število ± 1 pri 10. številki za posamezen izračun ± 1 pri najmanj pomembni številki za eksponentni prikaz
	Obseg izračuna	$\pm 1 \times 10^{-99}$ to $\pm 9.999999999 \times 10^{99}$ ali 0
HR	Broj znamenki unutarnjeg izracuna Preciznost*	18 znamenki ± 1 no na 10. znamenku svakog izračuna ± 1 na posljednju značajnu znamenku za prikaz eksponenta
	Raspon izračuna	$\pm 1 \times 10^{-99}$ a $\pm 9.999999999 \times 10^{99}$ ili 0
SK	Počet číslic pri internom výpočte Presnosť*	18 číslic 1 na desiatej číslici v prípade jedného výpočtu 1 na poslednej platnej číslici v prípade exponenciálneho zobrazenia
	Rozsah výpočtu	1×10^{-99} alebo $9.999999999 \times 10^{99}$
TU	İç Hesaplama Basamakları sayısı Hassas *	18 rakam Tek bir hesaplama için 10 rakamı ± 1 Üstel gösterim için en önemli ± 1
	Aralığı Hesaplama	$\pm 1 \times 10^{-99}$ için $9.999999999 \times 10^{99}$ veya 0

**Input Ranges / Plages des valeurs d'entrée /
диапазоны вводимых значений / Beviteli
tartományok / Zakresy wprowadzanych danych /
Domeniile de definiție / Definiční obory / диапазон
за въвеждане / Obsegi vnosov / Rasponi unosa /
Vstupné rozsahy / Giriş Aralığı**

Functions	Input Range	
sinx	DEG	$0 \leq x < 9 \times 10^9$
	RAD	$0 \leq x < 157\,079\,632.7$
	GRA	$0 \leq x < 1 \times 10^{10}$
cosx	DEG	$0 \leq x < 9 \times 10^9$
	RAD	$0 \leq x < 157\,079\,632.7$
	GRA	$0 \leq x < 1 \times 10^{10}$
tanx	DEG	Same as sinx, except when $ x = (2n-1) \times 90$
	RAD	Same as sinx, except when $ x = (2n-1) \times \pi/2$
	GRA	Same as sinx, except when $ x = (2n-1) \times 100$
$\sin^{-1}x$	$0 \leq x \leq 1$	
$\cos^{-1}x$		
$\tan^{-1}x$	$0 \leq x \leq 9.999\,999\,999 \times 10^{99}$	
$\sinh x$	$0 \leq x \leq 230\,258\,509\,2$	
$\cosh x$		
$\sinh^{-1}x$	$0 \leq x \leq 4.999\,999\,999 \times 10^{99}$	
$\cosh^{-1}x$	$1 \leq x \leq 4.999\,999\,999 \times 10^{99}$	
$\tanh x$	$0 \leq x \leq 9.999\,999\,999 \times 10^{99}$	
$\tanh^{-1}x$	$0 \leq x \leq 9.999\,999\,999 \times 10^{-1}$	
$\log x / \ln x$	$0 < x \leq 9.999\,999\,999 \times 10^{99}$	
10^x	$-9.999\,999\,999 \times 10^{99} \leq x \leq 99.999\,999\,99$	
e^x	$-9.999\,999\,999 \times 10^{99} \leq x \leq 230.258\,509\,2$	
\sqrt{x}	$0 \leq x < 1 \times 10^{100}$	
x^2	$ x < 1 \times 10^{50}$	
x^3	$ x \leq 2.154\,434\,69 \times 10^{33}$	
x^{-1}	$ x < 1 \times 10^{100}, x \neq 0$	
$\sqrt[3]{x}$	$ x < 1 \times 10^{100}$	
$x!$	$0 \leq x \leq 69$ (x is an integer)	

Functions	Input Range
nPr	$0 \leq n < 1 \times 10^{10}$, $0 \leq r \leq n$ (n,r are integers)
	$1 \leq \{n!/((n-r)!\} < 1 \times 10^{100}$
nCr	$0 \leq n < 1 \times 10^{10}$, $0 \leq r \leq n$ (n,r are integers)
	$1 \leq n!/r! < 1 \times 10^{100}$ or $1 \leq n!/((n-r)!) < 1 \times 10^{100}$
Pol(x,y)	$ x , y \leq 9.999\,999\,999 \times 10^{99}$ $\sqrt{x^2+y^2} \leq 9.999\,999\,999 \times 10^{99}$
Rec(r,θ)	$0 \leq r \leq 9.999\,999\,999 \times 10^{99}$ θ : Same as sinx
◀ ◯ ◯ "	$ a , b, c < 1 \times 10^{100}$ $0 \leq b, c$ The display seconds value is subject to an error of +/-1 at the second decimal place
	$ x < 1 \times 10^{100}$ Deciaml ↔ Sexagesimal Conversions $0^\circ 0' 0'' \leq x \leq 999999999^\circ 59' 59''$
$^{\wedge}(x^y)$	$x > 0$: $-1 \times 10^{100} < y \log x < 100$ $x = 0$: $y > 0$ $x < 0$: $y = n, m/(2n+1)$ (m,n are integers) However: $-1 \times 10^{100} < y \log x < 100$
$x \sqrt[y]{y}$	$y > 0$: $x \neq 0$, $-1 \times 10^{100} < 1/x \log y < 100$ $y = 0$: $x > 0$ $y < 0$: $x = 2n+1, (2n+1)/m$ ($m \neq 0$; m,n are integers)
a b/c	Total of integer, numerator, and denominator must be 10 digits or less (including division marks).
i~Rand(a,b)	$0 \leq a < 1 \times 10^{10}$, $0 \leq b < 1 \times 10^{10}$ (a,b should be positive integers or 0)
Rand	Result generates a 3 digits pseudo random number(0.000~0.999)
LCM(x,y,z)	$0 < x, y, z \leq 9.999\,999\,999 \times 10^{12}$ (positive integers) Default result when $x, y, z = 0$
GCD(x,y,z)	$0 < x, y, z \leq 9.999\,999\,999 \times 10^{12}$ (positive integers) Default result when $x, y, z = 0$




Functions	Input Range
$Q \dots r(x, y)$	$0 < x, y \leq 9.999\,999\,999 \times 10^{12}$ (positive integers) $0 \leq Q \leq 999\,999\,9999$, $0 \leq r \leq 999\,999\,9999$ (Q, r are integers) Default result when $x=0$
$\text{Mod}(x, y)$	$0 < x, y \leq 9.999999999 \times 10^{12}$ Default result = x when $y=0$
Single-variable	$ x < 1 \times 10^{100}$ $ \text{FREQ} < 1 \times 10^{100}$
Paired-variable	$ x < 1 \times 10^{100}$ $ y < 1 \times 10^{100}$ $ \text{FREQ} < 1 \times 10^{100}$
ABS	$ x < 1 \times 10^{100}$
Pfact	$x \leq 9999999999$ (positive integers)
BIN	Positive: 0~0111 1111 1111 1111 1111 1111 1111 1111 Negative: 1000 0000 0000 0000 0000 0000 0000 0000~ 1111 1111 1111 1111 1111 1111 1111 1111
DEC	Positive: 0~2147483647 Negative: -2147483648~-1
OCT	Positive: 0~177 7777 7777 Negative: 200 0000 0000~377 7777 7777
HEX	Positive: 0~7FFF FFFF Negative: 8000 0000~FFFF FFFF
$\sum (f(x), a, b)$	a and b are integers in the range of $-1 \cdot 10^{10} < a \leq b < 1 \cdot 10^{10}$.
$\prod (f(x), a, b)$	a and b are integers in the range of $-1 \cdot 10^{10} < a \leq b < 1 \cdot 10^{10}$.

EX #7

1st Priority	Recall memory (A, B, C, D, E, F, 0-9), Rand
2nd	Calculation within parentheses ().
3rd	Function with parenthesis that request the input argument to the right Pol(, Rec(, d/dx, $\int dx$, P(, Q(, R(, Det(, Trn(, Ide(, Adj(, Inv(, Arg(, Conjg(, Real(, Imag(, sin(, cos(, tan(, \sin^{-1} (, \cos^{-1} (, \tan^{-1} (, sinh(, cosh(, tanh(, \sinh^{-1} (, \cosh^{-1} (, \tanh^{-1} (, log(, ln(, e^{\wedge} (, 10^{\wedge} (, $\sqrt{}$ (, $\sqrt[3]{}$ (, Abs(, ROUND(, LCM(, GCD(, Q...r(, i~Rand(,
4th	Functions that come after the input value preceded by values, powers, power roots: x^2 , x^3 , x^{-1} , $x!$, $^{\circ}$, $^{\circ}$, $^{\circ}$, r, g, $^{\wedge}$ (, $\sqrt{}$ (, Percent %, $\log_a b$, EXP, $\blacktriangleright t$
5th	Fractions: a b/c, d/c
6th	Prefix symbol: (–) (negative sign), base-n symbols (d, h, b, o, Neg, Not)
7th	Statistical estimated value calculation: \hat{x} , \hat{y} , $\hat{x}1$, $\hat{x}2$ Metric conversion commands (cm \rightarrow in, etc)
8th	Multiplication where sign is omitted: Multiplication sign omitted immediately before π , e, variables (2π , $5A$, πA , etc.), functions with parentheses ($2\sqrt{(3)}$, $\text{Asin}(30)$, etc.)
9th	Permutations, combinations: nPr, nCr Complex number polar coordinate symbol (<)
10th	Dot: .
11th	Multiplication and division: \times , \div
12th	Addition and subtraction: +, –
13th	Logical AND (and)
14th	Logical OR, XOR, XNOR (or, xor, xnor)
15th	Calculation ending instruction: =, M+, M- STO (store memory), $\blacktriangleright r < \theta$, $\blacktriangleright a+bi$




EX #8

MATHEMATICS MODE: Shift SET-UP 1

Example 	Key in operation 	Display 
$(-2.5)^2$	((-) 2 • 5) x^2 =	$(-2.5)^2$ $\frac{25}{4}$
$(4 \times 10^{75})(-2 \times 10^{-79})$	4 EXP 7 5 \times (-) 2 EXP (-) 7 9 =	$4E75 \times$ $-\frac{1}{1250}$




EX #9

MATHEMATICS MODE: Shift SET-UP 1

Example 	Key in operation 	Display 
$23 + 7 \rightarrow A$	2 3 + 7 Shift STO A	$23+7 \rightarrow A$ 30
$2 \times \sin A = 1$	2 sin Alpha A =	$2\sin(A)$ 1
Clear memory	0 Shift STO A	$0 \rightarrow A$ 0




EX #10

MATHEMATICS MODE: Shift SET-UP 1

Example 	Key in operation 	Display 
123 + 456 → M+, Ans ² = 335,241	<input type="text"/> 1 <input type="text"/> 2 <input type="text"/> 3 <input type="text"/> + <input type="text"/> 4 <input type="text"/> 5 <input type="text"/> 6 <input type="text"/> M+ <input type="text"/> x ² <input type="text"/> =	Ans ² 335241
789900 – Ans = 454,659	<input type="text"/> 7 <input type="text"/> 8 <input type="text"/> 9 <input type="text"/> 9 <input type="text"/> 0 <input type="text"/> 0 <input type="text"/> – <input type="text"/> Ans <input type="text"/> =	789900-Ans 454659




EX #11

MATHEMATICS MODE: Shift SET-UP 1

Example 	Key in operation 	Display 
$1\frac{1}{2} + \frac{5}{6} = \frac{7}{3}$	<input type="text"/> 1 <input type="text"/> Shift <input type="text"/> $\frac{a}{b}$ <input type="text"/> 1 <input type="text"/> \rightarrow <input type="text"/> 2 <input type="text"/> \rightarrow <input type="text"/> + <input type="text"/> 5 <input type="text"/> $\frac{a}{b}$ <input type="text"/> 6 <input type="text"/> =	$1\frac{1}{2} + \frac{5}{6}$ $\frac{7}{3}$
$\frac{7}{3} \leftrightarrow 2.33333333$ (Fraction ↔ Decimal)	<input type="text"/> F↔D	$1\frac{1}{2} + \frac{5}{6}$ 2.33333333
$2.33333333 \leftrightarrow 2\frac{1}{3}$ (Decimal ↔ Mixed Fraction)	Shift <input type="text"/> $a\frac{b}{c} \rightarrow d\frac{e}{f}$ <input type="text"/> <input type="text"/>	$1\frac{1}{2} + \frac{5}{6}$ $2\frac{1}{3}$




EX #12

MATHEMATICS MODE: Shift SET-UP 1

Example 	Key in operation 	Display 
To calculate 25% of 820	8 2 0 × 2 5 Shift % =	820x25% 205
The percentage of 750 against 1250	7 5 0 ÷ 1 2 5 0 Shift % =	750÷1250% 60





EX #13

MATHEMATICS MODE: Shift SET-UP 1

Example 	Key in operation 	Display 
$86^{\circ}37'34.2'' \div 0.7 = 123^{\circ}45'6''$	8 6 ° ' " 3 7 3 4 . 2 ÷ 0 . 7 =	$86^{\circ}37'34.2'' \div 0.7$ $123^{\circ}45'6''$
$123^{\circ}45'6'' \rightarrow 123.7516667$	° ' "	$86^{\circ}37'34.2'' \div 0.7$ 123.7516667
$2.3456 \rightarrow 2^{\circ}20'44.16''$	2 . 3 4 5 6 = ° ' "	2.3456 $2^{\circ}20'44.16''$





EX #14

MATHEMATICS MODE:   **1**

Example 	Key in operation 	Display 
$1 \times 12 = 12$ $2 + 25 = 27$ using a multi-statement	$\boxed{1} \boxed{\times} \boxed{1} \boxed{2}$ Alpha  $\boxed{\div} \boxed{2} \boxed{+} \boxed{2} \boxed{5}$	1x12:2+25
	$\boxed{=}$	1x12 ▲ Disp 12
	$\boxed{=}$	2+25 ▲ 27
Replay the previous calculation history (1 x 12 = 12)	$\boxed{\blacktriangle}$	1x12 ▼ 12

EX #15

MATHEMATICS MODE:   **1**

Key in Operation 	Display 
Shift  C-Value  (menu selection page)	Input 1-79 00 ◀mP mn me mμ ao▶
$\boxed{3} \boxed{5} \boxed{=}$	g
$\boxed{+} \boxed{35} \boxed{=}$	g+35 44.80665
$\boxed{=} \boxed{=} \boxed{\times} \boxed{50} \boxed{=}$	Ansx50 2240.3325

EX #16

NO.	Constant	Symbol	Value	Unit
1.	Proton mass	m_p	$1.672621777 \times 10^{-27}$	kg
2.	Neutron mass	m_n	$1.674927351 \times 10^{-27}$	kg
3.	Electron mass	m_e	$9.10938291 \times 10^{-31}$	kg
4.	Muon mass	m_μ	$1.883531475 \times 10^{-28}$	kg
5.	Bohr radius $a_0 / 4\pi R_\infty$	a_0	$0.52917721092 \times 10^{-10}$	m
6.	Planck constant	h	$6.62606957 \times 10^{-34}$	J s
7.	Nuclear magneton $e\hbar / 2m_p$	μ_N	$5.05078353 \times 10^{-27}$	J T ⁻¹
8.	Bohr magneton $e\hbar / 2m_e$	μ_B	$927.400968 \times 10^{-26}$	J T ⁻¹
9.	$h / 2\pi$	\hbar	$1.054571726 \times 10^{-34}$	J s
10.	Fine-structure constant $e^2 / 4\pi\epsilon_0 \hbar c$	α	$7.2973525698 \times 10^{-3}$	
11.	Classical electron radius $\alpha^2 a_0$	r_e	$2.8179403267 \times 10^{-15}$	m
12.	Compton wavelength $h / m_e c$	λ_c	$2.4263102389 \times 10^{-12}$	m
13.	Proton gyromagnetic ratio $2\mu_p / \hbar$	γ_p	2.675222005×10^8	s ⁻¹ T ⁻¹
14.	Proton Compton wavelength $h / m_p c$	$\lambda_{c,p}$	$1.32140985623 \times 10^{-15}$	m
15.	Neutron Compton wavelength $h / m_n c$	$\lambda_{c,n}$	$1.3195909068 \times 10^{-15}$	m
16.	Rydberg constant $\alpha^2 m_e c / 2\hbar$	R_∞	10973731.568539	m ⁻¹
17.	(unified) atomic mass unit	u	$1.660538921 \times 10^{-27}$	kg
18.	Proton magnetic moment	μ_p	$1.410606743 \times 10^{-26}$	J T ⁻¹
19.	Electron magnetic moment	μ_e	$-928.476430 \times 10^{-26}$	J T ⁻¹
20.	Neutron magnetic moment	μ_n	$-0.96623647 \times 10^{-26}$	J T ⁻¹
21.	Muon magnetic moment	μ_μ	$-4.49044807 \times 10^{-26}$	J T ⁻¹
22.	Faraday constant $N_A e$	F	96485.3365	C mol ⁻¹
23.	Elementary charge	e	$1.602176565 \times 10^{-19}$	C
24.	Avogadro constant	N_A	$6.02214129 \times 10^{23}$	mol ⁻¹
25.	Boltzmann constant R / N_A	k	$1.3806488 \times 10^{-23}$	J K ⁻¹
26.	Molar volume of ideal gas RT / p T=273.15 K, p=101.325 kPa	V_m	22.413968×10^{-3}	m ³ mol ⁻¹
27.	Molar gas constant	R	8.3144621	J mol ⁻¹ K ⁻¹
28.	Speed of light in vacuum	c_0	299792458	m s ⁻¹
29.	First radiation constant $2\pi\hbar c^2$	c_1	$3.74177153 \times 10^{-16}$	W m ²
30.	Second radiation constant hc/k	c_2	1.4387770×10^{-2}	m K

NO.	Constant	Symbol	Value	Unit
31.	Stefan-Boltzmann constant	σ	5.670373×10^{-8}	$\text{W m}^{-2} \text{K}^{-4}$
32.	Electric constant $1 / \mu_0 c^2$	ϵ_0	$8.854187817 \times 10^{-12}$	F m^{-1}
33.	Magnetic constant	μ_0	$12.566370614 \times 10^{-7}$	N A^{-2}
34.	Magnetic flux quantum $h / 2e$	Φ_0	$2.067833758 \times 10^{-15}$	Wb
35.	Standard acceleration of gravity	g	9.80665	ms^{-2}
36.	Conductance quantum $2e^2/h$	G_0	$7.7480917346 \times 10^{-5}$	S
37.	Characteristic impedance of vacuum $\sqrt{\mu_0} / \epsilon_0 = \mu_0 c$	Z_0	376.730313461	Ω
38.	Celsius temperature	t	273.15	
39.	Newtonian constant of gravitation	G	6.67384×10^{-11}	$\text{m}^3 \text{kg}^{-1} \text{s}^{-2}$
40.	Standard atmosphere	atm	101325	Pa
41.	Proton g-factor $2 \mu_p / \mu_N$	g_p	5.585694713	
42.	$\lambda_{c,n} / 2\pi$	$\tilde{\lambda}_{c,n}$	$0.21001941568 \times 10^{-15}$	m
43.	Planck length $\hbar / m_P c = (\hbar G / c^3)^{1/2}$	l_P	1.616199×10^{-35}	m
44.	Planck time $l_P / c = (\hbar G / c^5)^{1/2}$	t_P	5.39106×10^{-44}	s
45.	Planck mass $(\hbar c / G)^{1/2}$	m_P	2.17651×10^{-8}	kg
46.	Atomic mass constant	m_u	$1.660538921 \times 10^{-27}$	kg
47.	Electron volt: $(e/c) \text{ J}$	eV	$1.602176565 \times 10^{-19}$	J
48.	Molar planck constant	$N_A h$	$3.9903127176 \times 10^{-10}$	J s mol^{-1}
49.	Wien displacement law constant	b	2.8977721×10^{-3}	m K
50.	Lattice parameter of Si(in vacuum, 22.5°C)	a	$543.1020504 \times 10^{-12}$	m
51.	Hartree energy $e^2 / 4 \pi \epsilon_0 a_0$	E_h	$4.35974434 \times 10^{-18}$	J
52.	Loschmidt constant N_A / V_m	n_0	2.6867805×10^{25}	m^{-3}
53.	Inverse of conductance quantum	G_0^{-1}	12906.4037217	Ω
54.	Josephson constant $2e/h$	K_J	483597.870×10^9	Hz V^{-1}
55.	Von Klitzing constant h/e^2	R_K	25812.8074434	Ω
56.	$\lambda_c / 2\pi$	$\tilde{\lambda}_c$	$386.15926800 \times 10^{-15}$	m
57.	Thomson cross section $(8 \pi / 3) r_e^2$	σ_e	$0.6652458734 \times 10^{-28}$	m^2
58.	Electron magnetic moment anomaly $ \mu_e / \mu_B - 1$	a_e	$1.15965218076 \times 10^{-3}$	
59.	Electron g-factor- $2(1 + a_e)$	g_e	-2.00231930436153	
60.	Electron gyromagnetic ratio $2 \mu_e / \hbar$	γ_e	$1.760859708 \times 10^{11}$	$\text{s}^{-1} \text{T}^{-1}$
61.	Muon magnetic moment anomaly	a_μ	$1.16592091 \times 10^{-3}$	
62.	Muon g-factor- $2(1 + a_\mu)$	g_μ	-2.0023318418	

NO.	Constant	Symbol	Value	Unit
63.	Muon Compton wavelength $h / m_{\mu}c$	$\lambda_{c,\mu}$	$11.73444103 \times 10^{-15}$	m
64.	$\lambda_{c,\mu} / 2\pi$	$\tilde{\lambda}_{c,\mu}$	$1.867594294 \times 10^{-15}$	m
65.	Tau Compton wavelength $h / m_{\tau}c$	$\lambda_{c,\tau}$	0.697787×10^{-15}	m
66.	$\lambda_{c,\tau} / 2\pi$	$\tilde{\lambda}_{c,\tau}$	0.111056×10^{-15}	m
67.	Tau mass	m_{τ}	3.16747×10^{-27}	kg
68.	$\lambda_{c,p} / 2\pi$	$\tilde{\lambda}_{c,p}$	$0.21030891047 \times 10^{-15}$	m
69.	Shielded proton magnetic moment (H ₂ O, sphere, 25°C)	μ'_{p}	$1.410570499 \times 10^{-26}$	J T ⁻¹
70.	Neutron g-factor $2 \mu_{\text{n}} / \mu_{\text{N}}$	g_{n}	-3.82608545	
71.	Neutron gyromagnetic ratio $2 \mu_{\text{n}} / \hbar$	γ_{n}	1.83247179×10^8	s ⁻¹ T ⁻¹
72.	Deuteron mass	m_{d}	$3.34358348 \times 10^{-27}$	kg
73.	Deuteron magnetic moment	μ_{d}	$0.433073489 \times 10^{-26}$	J T ⁻¹
74.	Helion mass	m_{h}	$5.00641234 \times 10^{-27}$	kg
75.	Shielded helion magnetic moment (gas, sphere, 25°C)	μ'_{h}	$-1.074553044 \times 10^{-26}$	J T ⁻¹
76.	Shielded helion gyromagnetic ratio $2 \mu'_{\text{h}} / \hbar$ (gas, sphere, 25°C)	γ'_{h}	2.037894659×10^8	s ⁻¹ T ⁻¹
77.	Alpha particle mass	m_{α}	$6.64465675 \times 10^{-27}$	kg
78.	Shielded proton gyromagnetic ratio $2\mu'_{\text{p}} / \hbar$ (H ₂ O, sphere, 25°C)	γ'_{p}	2.675153268×10^8	s ⁻¹ T ⁻¹
79.	Proton magnetic shielding correction $1 - \mu'_{\text{p}} / \mu_{\text{p}}$ (H ₂ O, sphere, 25°C)	σ'_{p}	25.694×10^{-6}	

! Constant values cannot perform rounding. / Les valeurs constantes ne peuvent pas effectuer d'arrondi. / Постоянные значения не могут выполнить округление / Konstans értékek nem tudja ellátni kerekítés / Wartości stałe nie może wykonać zaokrąglenie / Valori constante nu se poate efectua de rotunjire / Konstantní hodnoty nelze provést zaokrouhlení / Постоянни стойности не може да извършва закръгляване / Stalne vrednosti, ne more izvesti zaokroževanje / Konstantne vrijednosti ne može obavljati zaokruživanje / Konstantné hodnoty nemožno vykonať zaokrúhlenie / Sabit değerler yuvarlama gerçekteştirin olamaz

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







<http://physics.nist.gov/constants>

EX #17

Page	Symbol	Unit
1	feet	feet
1	m	meter
1	mil	milliliter
1	mm	millimeter
1	in	inch
1	cm	centimeter
1	yd	yard
1	mile	mile
1	km	kilometer
2	ft ²	square foot
2	yd ²	square yard
2	m ²	square meter
2	mile ²	square mile
2	km ²	square kilometer
2	hectares	hectare
2	acres	acre
3	°F	degree Fahrenheit
3	°C	degree Celsius
4	gal	gallon (U.K.)
4	liter	liter
4	B.gal	gallon (U.S.)
4	pint	pint
4	fl.oz	fluid ounces (U.S.)
5	Tr.oz	ounce (troy or apothecary)
5	oz	ounces
5	lb	libra
5	Kg	kilogram
5	g	gram
6	J	joule
6	cal.f	calorie
7	atm	standard atmosphere
7	Kpa	kilopascal
7	mmHg	millimeter of mercury
7	cmH ₂ O	centimeter of water
8	m/s	Meter per second
8	km/h	Kilometer per hour








EX #18

MATHEMATICS MODE: Shift ☐ SET-UP ☐ 1

Key in Operation 	Display 
1 0 + 5 <input type="button" value="CONV"/> (menu selection menu)	Unit (distance)  <u>feet</u> m mil mm in cm yd mile km
 <input type="button" value="="/> (confirm selection ft ²)	ft ² yd ² m ² mile ² km ² ha acres 5
  <input type="button" value="="/> (confirm the value convert into m ²)	10+5ft ²  m ²
<input type="button" value="="/>	10+5ft ²  m ²  10.4645152















EX #19

MATHEMATICS MODE: Shift ☐ SET-UP ☐ 1

Example 	Key in operation 	Display 
$(\sqrt[3]{2^2 + 5^3})^{-1} \times \pi$ = 0.6217559776	(<input type="button" value="Shift"/> <input type="button" value="√"/> + 5 <input type="button" value="Shift"/> <input type="button" value="x<sup>2</sup>"/>) <input type="button" value="x<sup>-1</sup>"/> <input type="button" value="x"/> <input type="button" value="Shift"/> <input type="button" value="π"/> <input type="button" value="="/>	$(\sqrt[3]{2^2 + 5^3})^{-1} \times \pi$ 0.6217559776
$(\sqrt[3]{2^6} + \sqrt[5]{243})$ = 7	(<input type="button" value="Shift"/> <input type="button" value="√"/> 6   + <input type="button" value="Shift"/> <input type="button" value="x<sup>2</sup>"/> <input type="button" value="√"/> 5  2 4 3 ) <input type="button" value="="/>	$(\sqrt[3]{2^6} + \sqrt[5]{243})$ 7








EX #20

MATHEMATICS MODE:   **1**

Example 	Key in operation 	Display 
$e^{-3} + 10^{1.2} + \ln 3 = 16.99733128$	Shift   3  + Shift  1  2  +  3 =	$e^{-3} + 10^{1.2} + \ln(3)$ 16.99733128
$\log_3 81 - \log 1 = 4$	Alpha  3  8 1  -  1 =	$\log_3(81) - \log(1)$ 4









EX #21

MATHEMATICS MODE:   **1**

Example 	Key in operation 	Display 
Convert 180 degree into radian and gradient ($180^\circ = \pi^{\text{Rad}} = 200^{\text{Gad}}$)	Shift  4 1 8 0 Shift  1 = Shift  5 =	180°  π 180° 200




EX #22

MATHEMATICS MODE:   **1**

Example 	Key in operation 	Display 
Degree Mode	Shift  3	
$\sin 60 = \frac{\sqrt{3}}{2}$	 6 0 =	$\sin(60)$ $\frac{\sqrt{3}}{2}$
$\frac{1}{\sin 45^\circ} = \text{Cosec } 45^\circ = \sqrt{2}$	 4 5)  =	$\sin(45)^{-1}$ $\sqrt{2}$




EX #23

MATHEMATICS MODE: ☐ Shift ☐ SET-UP ☐ 1

Example 	Key in operation 	Display 
$\sinh 2.5 - \cosh 2.5$ = -0.082084998	hyp 1 2 • 5) — hyp 2 2 • 5) =	$\sinh(2.5) - \cosh(\triangleright)$ -0.08208499862
$\cosh^{-1} 45$ = 4.499686191	hyp 5 4 5 =	$\cosh^{-1}(45)$ 4.499686191




EX #24

MATHEMATICS MODE: ☐ Shift ☐ SET-UP ☐ 1

Example 	Key in operation 	Display 
${}_{10}P_3 = 720$	1 0 Shift nPr 3 =	${}_{10}P_3$ 720
${}_5C_2 = 10$	5 Shift nCr 2 =	${}_5C_2$ 10
$5! = 120$	5 Shift x! =	$5!$ 120

EX #25

MATHEMATICS MODE: ☐ Shift ☐ SET-UP ☐ 1

Example 	Key in operation 	Display 
Generate a random number between 0.000 & 0.999	Shift Rand =	Rand $\frac{139}{1000}$
Generate an integer from a range of 1 to 100	Alpha i-Rand 1 Shift , 1 0 0 =	$i\sim\text{Rand}(1,100)$ 33

EX #26**MATHEMATICS MODE:** Shift SET-UP 1

Key in operation 	Display
Apps 1 Alpha X + 1 > 0 > 5 =	$\sum_{x=0}^5 (x+1)$ 720

EX #27**LINE MODE:** Shift SET-UP 2

Key in operation 	Display
Apps 2 Alpha X + 1 Shift , 1 Shift ' 5 =	$\sum (x+1, 1, 5)$ 20

EX #28**LINE MODE:** Shift SET-UP 2

Example 	Key in operation 	Display
To calculate Maximum value of 3, sin30 and cos30	Apps 3 3 Shift , sin 3 0) Shift ' cos 6 0 =	$\text{Max}(3, \sin(30), \cos(30))$ 3
To calculate Minimum value of 3, sin30 and cos30	Apps 4 3 Shift , sin 3 0) Shift ' cos 6 0 =	$\text{Min}(3, \sin(30), \cos(30))$ $\frac{1}{2}$

EX #29**MATHEMATICS MODE:** Shift SET-UP 1

Example	Key in operation	Display
The modulus after division (Mod) of 23 and 5	Apps 6 2 3 Shift ' 5 =	$\text{Mod}(23, 5)$ 3
The modulus after division (Mod) of -23 and 5	Apps 6 (-) 2 3 Shift ' 5 =	$\text{Mod}(-23, 5)$ 2

EX #30**MATHEMATICS MODE:** Shift SET-UP 1

Example 	Key in operation 	Display
LCM(15, 27, 39) = 1755	Apps 7 1 5 Shift , 2 7 Shift , 3 9 =	LCM(15,27,39 1755

LINE MODE: Shift SET-UP 2

Example 	Key in operation 	Display
GCD(12, 24, 60) = 12	Apps 8 1 2 Shift , 2 4 Shift , 6 0 =	GCD(12,24,60 12









EX #31**MATHEMATICS MODE:** Shift SET-UP 1

Key in Operation 	Display
9 9 9 9 9 9 9 9 9 9 = Shift PFact =	9999999999 3 ² x11x41x271x(9▶
1 7 7 7 = Shift PFact	1777 (1777)








EX #32**LINE MODE:** Shift SET-UP 2

Example 	Key in operation 	Display
35 ÷ 10 = 3 x 10 + 5 Q=3 R=5	Apps 5 3 5 Shift , 1 0 =	Q...r(35, 10 Q= 3 R= 5
Quotient value (Q) + 3 = 6	+ 3 =	Ans+3 6
Recall Quotient value (Q)	RCL C	C 3
Recall Remainder value (r)	RCL D	D 5







EX #33**MATHEMATICS MODE:**   **1**

Example 	Key in operation 	Display 
With rectangular coordinate ($x=1$, $y=\sqrt{3}$). Find Polar coordinate (r , θ) at degree mode	Shift  1 Shift   3 =	Pol(1, $\sqrt{3}$ $r=2$, $\theta=60$
	RCL 	X 2
	RCL 	Y 60





EX #34**LINE MODE:**   **2**

Example 	Key in operation 	Display 
With Polar coordinate ($r=2$, $\theta=60^\circ$). Find Rectangular coordinate (x , y) at degree mode	Shift  2 Shift  6 0 =	Rec(2, 60 X= 1 Y= 1.732050808
	RCL 	X 1
	RCL 	Y 1.732050808

EX #35**MATHEMATICS MODE:**   **1**




Example 	Key in operation 	Display 
$ \sin(60-5) \times (-\pi) $	Abs  6 0 - 5) x ((-) Shift   =	$ \sin(60-5) \times (-\pi) $ 2.573442045

EX #36**LINE MODE:**   **2**




Example 	Key in operation 	Display 
$1+200 = 5 \times 10^{-3}$	1 ÷ 2 0 0 =	1+200 5×10^{-3}
	ENG ENG	1+200 5000×10^{-6}
	Shift 	1+200 5×10^{-3}

EX #37

LINE MODE: ☐ Shift ☐ SET-UP ☐ 2




Example 	Key in operation 	Display 
$\frac{2}{3} + 2 = \frac{8}{3} = 2.666666667$	<input type="button" value="2"/> <input type="button" value="1"/> <input type="button" value="3"/> <input type="button" value="+"/>	2_3+2
	<input type="button" value="2"/> <input type="button" value="="/>	8_3
	<input type="button" value="F↔D"/>	2_3+2 2.666666667

MATHEMATICS MODE: ☐ Shift ☐ SET-UP ☐ 1




Example 	Key in operation 	Display 
$\frac{2}{3} + 2 = \frac{8}{3} = 2.666666667$	<input type="button" value="2"/> <input type="button" value="1"/> <input type="button" value="3"/> <input type="button" value="➤"/> <input type="button" value="+"/>	$\frac{2}{3} + 2$
	<input type="button" value="2"/> <input type="button" value="="/>	$\frac{8}{3}$
	<input type="button" value="F↔D"/>	$\frac{2}{3} + 2$ 2.666666667
$\tan 30 = \frac{\sqrt{3}}{3}$ =0.5773502692	<input type="button" value="tan"/> <input type="button" value="3"/> <input type="button" value="0"/> <input type="button" value="="/>	$\tan(30)$ $\frac{\sqrt{3}}{3}$
	<input type="button" value="F↔D"/>	$\tan(30)$ 0.5773502692
$\pi \div 8 = \frac{1}{8}\pi$ =0.3926990817	<input type="button" value="Shift"/> <input type="button" value="π"/> <input type="button" value="÷"/> <input type="button" value="8"/> <input type="button" value="="/>	$\pi \div 8$ $\frac{1}{8}\pi$
	<input type="button" value="F↔D"/>	$\pi \div 8$ 0.3926990817

EX #38




MATHEMATICS MODE: ☐ Shift ☐ SET-UP ☐ 1

Example 	Key in operation 	Display 
$3+4i =$ 5∠53.13010235	<input type="button" value="3"/> <input type="button" value="+"/> <input type="button" value="4"/> <input type="button" value="i"/> <input type="button" value="Apps"/>	$3+4i \blacktriangleright r\angle\theta$
	<input type="button" value="1"/> <input type="button" value="="/>	5∠53.13010235
$\sqrt{2} \angle 45 = 1+i$	<input type="button" value="√"/> <input type="button" value="2"/> <input type="button" value="➤"/> <input type="button" value="∠"/> <input type="button" value="4"/>	$\sqrt{2} \angle 45 = \blacktriangleright a+bi$
	<input type="button" value="5"/> <input type="button" value="Apps"/> <input type="button" value="2"/> <input type="button" value="="/>	1+i




EX #39LINE MODE: Shift ☐ SET-UP ☐ 2

Example 	Key in operation 	Display 
Absolute value (r) and argument (θ) if complex number is $6+8i$	Abs 6 + 8 i) =	Abs ($6+8i$) 10
	➤ DEL Apps 3 =	Arg ($6+8i$) 53.13010235

EX #40LINE MODE: Shift ☐ SET-UP ☐ 2


































































Example 	Key in operation 	Display 
$3+4i$ is $3-4i$	Apps i 4 3 + 4) =	Conjg ($3+4i$) 3 $-4i$

EX #41MATHEMATICS MODE: Shift ☐ SET-UP ☐ 1

Example 	Key in operation 	Display 
Real and Imaginary values of a complex number is $23\angle 54$	Apps 5 2 3 \angle 5 4) =	Real($23\angle 54$) 13.5190608
	➤ DEL Apps 6 =	Imag($23\angle 54$) 18.60739087

















EX #42

MATHEMATICS MODE: Shift SET-UP 1

Example 	Key in operation 	Display 
10101011+1100- 1001x101+10 =10100001 (in Binary Mode)	                          	10101011+1100-1> BIN 1010 0001
645+321-23x7+2 =1064 (in Octal Mode)	                 	645+321-23x7+2 OCT 00000001064
(77A6C+D9)xB+F =57C87 (in Hexadecimal Mode)	                	(77A6C+D9)xB+F HEX 00057C87






































EX #43

MATHEMATICS MODE: Shift SET-UP 1

Example 	Key in operation 	Display 
12345+101=12446	         	12345+101 DEC 12446
		12345+101 HEX 000309E
		12345+101 BIN 1001 1110
		12345+101 OCT 00000030236





EX #44

MATHEMATICS MODE: Shift SET-UP 1

Example 	Key in operation 	Display 
789ABC Xnor 147258	              	789ABCxnor147258 HEX FF93171B
Ans or 789ABC	         	Ans or 789ABC HEX FFFB9FBF
Neg 789ABC	        	Neg(789ABC HEX FF876544





EX #45

LINE MODE: Shift SET-UP 2

Key in operation 	Display 
MODE 3	1:SD 2:Lin 3:Quad 4:Log 5:e EXP 6:ab EXP 7:Pwr 8:Inv
1 (SD)	
7 5 = 8 5 = 9 0 = 7 7 = 7 9 =	
CA Apps 4 1 =	$\sum x^2$ 33120
CA Apps 4 2 =	$\sum x$ 406
CA Apps 5 1 =	n 5
CA Apps 5 2 =	\bar{x} 81.2
CA Apps 5 3 =	$x \ n$ σ 5.528109984
CA Apps 5 4 =	$x \ n-1$ σ 6.180614856





EX #46

LINE MODE: Shift SET-UP 2

Key in operation 	Display 
MODE 3	1:SD 2:Lin 3:Quad 4:Log 5:e EXP 6:ab EXP 7:Pwr 8:Inv
3 (Quad)	
1 8 = 3 5 = 4 0 = 2 1 = 1 9 = > < 3 8 = 5 4 = 5 9 = 4 0 = 3 8 =	
CA 3 0 Apps 8 6 =	30 \hat{y} 48.69615715
CA 5 0 Apps 8 4 =	50 \hat{x}_1 31.30538226
CA 5 0 Apps 8 5 =	50 \hat{x}_2 -167.1096731


EX #47

LINE MODE: Shift SET-UP 2

Key in operation 	Display 
MODE 3 1	
2 0 = 4 3 = 2 6 = 4 6 = 2 0 = 4 3 =	
CA 2 6 Apps 7 4 =	26 \blacktriangleright t -0.6236095645
Apps 7 1 =	P(Ans 0.26644



EX #48

MATHEMATICS MODE: Shift SET-UP 1

Key in operation 	Display 12345 12345
MODE 5 2 (3 unknowns)	<div>a</div> <div>b</div> <div>c</div>
2 = 4 = (-) 4 = 2 0 =	<div>a</div> <div>b</div> <div>c</div>
2 = (-) 2 = 4 = 8 =	<div>a</div> <div>b</div> <div>c</div>
5 = (-) 2 = (-) 2 = 2 0 =	<div>a</div> <div>b</div> <div>c</div>
=	X=
=	Y=
=	Z=



EX #49

MATHEMATICS MODE: Shift SET-UP 1

Key in operation 	Display 
MODE 5 ✓ 2 (Cubic equation)	a b c d 0
5 = 2 = (-) 2 = 1 =	1 b 2 c -2 d 1
=	$X_1 =$ -1
=	$X_2 =$ $\frac{3}{10} + 0.331662479i$
=	$X_3 =$ $\frac{3}{10} - 0.331662479i$



EX #50

LINE MODE: Shift SET-UP 2

Key in Operation 	Display 
Alpha x Alpha $=$ 1 $\frac{\Box}{\Box}$ 3 \rightarrow Shift π Alpha B x^2 Alpha C	$X = \frac{1}{3} \pi B^2 C$
Shift Solve	$B?$ 0
5 =	$C?$ 0
2 0 =	Solve for X Initial value $\rightarrow 0$
= Solution variable \rightarrow Precision of solution \rightarrow	$X = \frac{1}{3} \pi B^2 C$ $X =$ Solution $\rightarrow 523.5987756$ $L-R =$ 0



EX #51

LINE MODE: Shift SET-UP 2

Key in operation 	Display 
MODE 1 (COMP MODE)	0
Alpha Y Alpha = 5 Alpha X x^2 - 2 Alpha X + 1	$Y=5X^2-X+1$ 0
CALC 5 =	$Y=5X^2-X+1$ 116
CALC 7 =	$Y=5X^2-X+1$ 232



EX #52

LINE MODE: Shift SET-UP 2

Key in operation 	Display 
MODE 1 (COMP MODE)	0
Shift $\frac{d}{dx}$ sin 3 Alpha X + 3 0) Shift ' 1 0 Shift ' 1 EXP (-) 8) =	$d/dx(\sin(3X+30))\triangleright$ 0.02617993878


EX #53

LINE MODE: Shift SET-UP 2

Key in operation 	Display 
MODE 1	0
\int_0^x 5 Alpha X x^4) + 3 Alpha X x^2 + 2 Alpha X + 1 Shift ' 2 Shift ' 3 Shift ' 4) =	$\int (5X^4 + 3X^2 + 2X) \triangleright$ 236


EX #54

LINE MODE: Shift SET-UP 2

Key in operation 	Display 12345 12345
MODE 7 1 ✓ 2	MatA: 3x3 [1 0 0] [0 0 0] [0 0 0]
1 = 2 = 3 = 4 = 5 = 6 = 7 = 8 = 9 =	MatA: 3x3 [1 4 9] [4 16 36] [9 36 81]
CA Apps 1 2 ✓ 2	MatB: 3x3 [1 0 0] [0 0 0] [0 0 0]
9 = 8 = 7 = 6 = 5 = 4 = 3 = 2 = 1 =	MatB: 3x3 [9 8 7] [6 5 4] [3 2 1]
CA Apps 3 X	MatA x 1 0
Apps 4 =	MatAns: 3x3 [21 24 18] [84 69 54] [138 114 90] 30


EX #55

LINE MODE: Shift SET-UP 2

Key in operation 	Display 12345 12345
CA Apps 1 3 ✓ ✓ 3	MatC: 2x2 [1 0] [0 0] 0
3 = (-) 2 = (-) 1 = 5 =	MatC: 2x2 [3 -2] [-1 2] 5
CA Apps 5 X 2 =	MatAns: 2x2 [7 -4] [-2 10] 6


EX #56

LINE MODE: ☐ Shift ☐ SET-UP ☐ 2

Key in operation 	Display <div>12345 12345</div>
CA Apps 1 1 \downarrow 2	MatA: 3x3 $\begin{bmatrix} 1 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \end{bmatrix}$
1 0 = (-) 5 = 3 = (-) 4 = 9 = 2 = 1 = 7 = (-) 3 =	MatA: 3x3 $\begin{bmatrix} 1 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \end{bmatrix}$
CA Apps \downarrow 1	Det() 0
Apps 3) =	Det(MatA) -471





EX #57

LINE MODE: ☐ Shift ☐ SET-UP ☐ 2

Key in operation 	Display <div>12345 12345</div>
CA Apps 1 2 \downarrow 3	MatB: 3x2 $\begin{bmatrix} 1 & 0 \\ 0 & 0 \\ 0 & 0 \end{bmatrix}$
9 = 5 = 6 = 2 = 8 = 4 =	MatB: 3x2 $\begin{bmatrix} 1 & 0 \\ 0 & 0 \\ 0 & 0 \end{bmatrix}$
CA Apps \downarrow 2	Trn() 0
Apps 4) =	MatAns: 2x3 $\begin{bmatrix} 1 & 0 & 0 \\ 0 & 0 & 0 \end{bmatrix}$









EX #58

LINE MODE: ☐ Shift ☐ SET-UP ☐ 2


Key in operation 	Display 
CA Apps  3	Ide(1 0
2) =	MatAns: 2x2  1

EX #59


LINE MODE: ☐ Shift ☐ SET-UP ☐ 2

Key in operation 	Display 
CA Apps 1 1   3	MatA: 2x2  0
2 = 3 = 4 = 5 =	MatA: 2x2  5
CA Apps  4	Adj(1 0
Apps 3) =	MatAns: 2x2  5

EX #60LINE MODE: Shift ☐ SET-UP ☐ 2


Key in operation 	Display 12345 12345
CA Apps 1 3 ▾ ▾ 3	MatC: 2x2 [0 0] 0
8 = 2 = 3 = 6 =	MatC: 2x2 [8 2] 6
CA Apps ▾ 5	InvC 0
Apps 5) =	MatAns: 2x2 [0.0476 -0.0471] [-0.071 0.1904] 1.7

EX #61LINE MODE: Shift ☐ SET-UP ☐ 2

Key in operation 	Display 12345 12345
CA Abs	AbsC 0
Apps 7) =	MatAns: 2x2 [0.0476 0.0476] [0.0714 0.1904] 1.7


EX #62

LINE MODE: Shift SET-UP 2

Key in operation 	Display 12345 12345
MODE 8 1 2	VctA:2 [0] 0
8 = 5 =	VctA:2 [8 F] 5
CA Apps 1 2 2	VctB:2 [0] 0
7 = 3 =	VctB:2 [1 F] 3
CA Apps 3 -	VctA-1 0
Apps 4 =	VctAns:2 [2] 1


EX #63

LINE MODE: Shift SET-UP 2

Key in operation 	Display 12345 12345
CA Apps 1 3 1	VctC:3 [0 0] 0
4 = 5 = (-) 6 =	VctC:3 [4 5 F] -6
CA Apps 5 x 5 =	VctAns:3 [25 -30] 20


EX #64

LINE MODE: Shift SET-UP 2

Key in operation 	Display 12345 12345
CA Apps 1 1 1	VctA: 3 [0 0] 0
4 = 5 = (-) 6 =	VctA: 3 [4 5 -F] -6
CA Apps 1 2 1	VctB: 3 [0 0] 0
(-) 7 = 8 = 9 =	VctB: 3 [-1 8 -F] 9
CA Apps 3	VctA: 1 0
Apps 8	VctA: 1 0
Apps 4 =	VctA: VctB -42


EX #65

LINE MODE: Shift SET-UP 2

Key in operation 	Display 12345 12345
CA Apps 1 1 1	VctA: 3 [0 0] 0
4 = 5 = (-) 6 =	VctA: 3 [4 5 -F] -6
CA Apps 1 2 1	VctB: 3 [0 0] 0
(-) 7 = 8 = 9 =	VctB: 3 [-1 8 -F] 9
CA Apps 3 X	VctA: 1 0
Apps 4 =	VctAns: 3 [-F 6 6] 93


EX #66





LINE MODE: Shift SET-UP 2

Key in operation 	Display 12345 12345
CA Apps 1 3 1	VctA: 3 [] 0 0] 0
4 = 5 = (-) 6 =	VctA: 3 [4 5 [-F] -6
CA Abs Apps 5) =	Abs(VctC) 8.774964387

EX #67

LINE MODE: Shift SET-UP 2

Key in operation 	Display 12345 12345
CA Apps 1 1 1	VctA: 3 [] 0 0] 0
(-) 1 = 0 = 1 =	VctA: 3 [-1 0 []] 1
CA Apps 1 2 1	VctB: 3 [] 0 0] 0
1 = 2 = 0 =	VctB: 3 [1 2 []] 0
CA Apps 3 Apps 8 Apps 4 =	VctA·VctB -1
÷ (Abs Apps 3) × Abs Apps 4) =	Ans÷(Abs(VctA)×▶ -0.316227766
Shift cos ⁻¹ Ans) = Apps 3 × Apps 4 =	VctAns: 3 [-F 1 -2] -2
Abs Apps 7) = Apps 7 ÷ Ans =	VctAns: 3 [0.3333 -0.666] -2.3

Key in operation 	Display 
MODE 6	$f(x)=$
Alpha X Shift x^{-1} + 3 Alpha X x^2 - 2 Alpha X	$f(x)= X^3+3X^2-2X$
= = = =	 1
▼ ▼ ▼ ▼	 5

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