

ENGINEERING MATHEMATICS MADE EASY - FUNCTIONALITY

for the TiNspire CAS – www.TiNspireApps.com

Algebra & Complex Numbers

Solve any Equation or Inequality
Solve 2x2 system - Step by Step
READ: PEMDAS - Order of Operation
Simplify & Evaluate
Find Partial Fractions
Solve Proportion (Ratio) Problems
Find Slope
Find $y=mx+b$
Find Parallel and Perpendicular Lines
Do the Quadratic Equation
One Complex Number : All-in-one-Explorer
Two Complex Numbers : All-in-one-Explorer

Exponents & Logarithms

READ: Exponents & Rules
Solve Money/Exponential Growth Problems
READ: Logarithms & Rules
Evaluate Logarithms
Logarithm Solver
Explicit Sequence & Partial Sum
Recursive Sequence & Partial Sum
Sequence Formula Finder
Geometric Sequence & Series
Arithmetic Sequence
Sigma S-Notation

Vectors & Matrices

READ: Vector Rules
2D: Vector Length
3D: Unit Vector
All in one Matrix A Explorer
Two Matrices: $A+B$
Find the Inverse of A
Find the Determinant of A
Row Echolon(A)
Reverse Row Echolon(A) - STEPS
Solve System of Equations $A*X=B$
Cramer Rule to solve $A*X=B$

Trigonometry & Conics

READ: Intro
Solve any 90° Triangle
Solve any triangle
SSS-Case
SAS-Case
SSA-Case
SAA-Case
Evaluate $\sin(x)$
READ: Circle Properties & Formulas
READ: Trig Identities
Find Sector
Arc Length Solver
All-in-One Conic Analyzer

Combinatorics & Probability

$n_1 * n_2 * n_3 * \dots$ = Multiplication Principle
 $n!$ = Number of Rearrangements
 nPr = Number of ways to rearrange r given n
 nCr = Number of ways to pick r given n
Find Average
Find Std Deviation
Find Weighted Average
Read: Probability Introduction & Examples
Read: Probability Rules & Properties
Conditional Probability
Expected Value: Find μ and s
Read: Cards
Read: Dice
Read: Marbles
Read: Coins
 $P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$

Statistics

Binomial Distribution Table
Cumulative Binomial Distribution
Normal Distribution
Read: About Normal Distributions
Find Regression Line $y=mx+b$
Find Regression Line $y=mx+b$ Step by Step
Read: All about Linear Regression
Read: About Tests of Significance
Z-score Solver
Z-Test for Mean $H_0: \mu = \mu_0$
Z-Test for Means $H_0: \mu_1 = \mu_2$
Z-Test for Proportion $H_0: p = p_0$
Z-Test for Proportions $H_0: p_1 = p_2$
Read: Confidence Intervals & their Behavior

CI for Mean μ with known Standard Deviation
CI for Proportion p

Calculus & Numerics

Newton Method
Bisection Method
READ: Limit Rules
Compute 1- and 2-sided Limits: $\lim_{x \rightarrow c} f(x)$
L'Hopital Rule
READ: Differentiation Rules
Find $f'(x) = \lim_{h \rightarrow 0} [f(x+h) - f(x)]/h$
Derivatives and Tangentline
Critical Points
Points of Inflection & Concavity
READ: Integration Rules
Antiderivatives & Integrals
Definite Integral (Netarea) $\int_a^b f(x) dx$
APPS: VOLUME - Disk Method about x-axis
Area Approx. RAMS
Limits: $\lim_{(x,y) \rightarrow (x_0, y_0)}$
Partial Derivatives and Gradient
Total Differential: $\Delta x dx + \Delta y dy$
Chain Rule
Relative Extrema of $f(x,y)$
Multiple Integrals

Differential Equations & Transforms

Solve any 1. order D.E.
 $M(x,y)dx + N(x,y)dy = 0$
Linear in y Differential Equation
Newtons Law of Cooling / Heating
Euler Method given n =Number of Pts.
Solve any 2. order D.E.
Homogeneous Differential Equation
Non-Homogeneous Differential Equation
Laplace Transform
Inverse Laplace Transform
Table of Laplace Transforms
Fourier Series of $f(x)$ over $[a,b]$
Table of Fourier Transforms

Convert

Polar Coordinates $\leftrightarrow (x,y)$
Degree \leftrightarrow Radian
Degree \leftrightarrow Degree/Minutes/Seconds
Revolution to Degree/Radian
Revolution/Min to Radian/Sec

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