GRAPHING CALCULATOR

CONCEPT A graphing calculator is used to perform mathematical calculations and plot graphs. It includes a high-resolution screen, a keypad for inputting mathematical expressions, and a variety of built-in functions for performing complex calculations. These calculators are commonly used in advanced math, science, engineering and finance.

BACKGROUND

The first handheld scientific calculators were introduced in the 1970's. By the mid-1980s, the first graphing calculator, the Casio fx-7000G, was released, which allowed users to graph functions and perform advanced mathematical calculations. In 1990, Texas Instruments released the TI-81, which became a widely used and popular graphing calculator in high schools and universities. Since then, graphing calculators have become an essential tool for students and professionals in math, science, and engineering, with newer models offering increasingly advanced features such as color displays and programming capabilities.

EXAMPLES

LINEAR EQUATIONS: $y = mx + b$, where m is the slope of the line and b is the y-intercept.

QUADRATIC EQUATIONS: $y = ax^2 + bx + c$, where a, b, and c are constants.

EXPONENTIAL FUNCTIONS: $y = ab^x$, where a and b are constants.

TRIGONOMETRIC FUNCTIONS: sin(x), cos(x), tan(x), cot(x), sec(x), csc(x).

LOGARITHMIC FUNCTIONS: log(x), ln(x), log10(x), where x is the value being evaluated.

STATISTICAL FUNCTIONS: mean, median, mode, standard deviation, correlation coefficient, regression analysis.

CALCULUS FUNCTIONS: derivatives, integrals, limits, and series expansions.

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