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ACADEMY

CBSE FOUNDATION BOOSTER

Class 11 Maths

Formula Sheet & Key Concepts

A free study resource by **Toppers Hub Academy**

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Sets, Relations & Functions

- $n(A \cup B) = n(A) + n(B) - n(A \cap B)$.
- A function maps each input to exactly one output.
- Domain is the set of inputs; range is the set of outputs.

Trigonometry

- $\sin(A \pm B) = \sin A \cos B \pm \cos A \sin B$.
- $\cos(A \pm B) = \cos A \cos B \mp \sin A \sin B$.
- $\sin^2 \theta + \cos^2 \theta = 1$.
- General solution: $\sin \theta = \sin \alpha \Rightarrow \theta = n\pi + (-1)^n \alpha$.

Algebra & Sequences

- Quadratic roots: $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$.
- Binomial theorem: $(a+b)^n = \sum {}^nC_r a^{n-r} b^r$.
- AP: $a_n = a + (n-1)d$; GP: $a_n = ar^{n-1}$.
- Sum of infinite GP ($|r| < 1$) = $a / (1-r)$.

Coordinate Geometry & Calculus

- Slope of a line: $m = (y_2 - y_1) / (x_2 - x_1)$.
- Distance from a point to a line and section formula.
- Limit: the value a function approaches as x approaches a point.
- Derivative of x^n is $n x^{n-1}$ (introduction to calculus).

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