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CBSE FOUNDATION BOOSTER

Class 9 Maths

Formula Sheet & Key Concepts

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Number Systems & Polynomials

- Rational numbers can be written as p/q ; irrational numbers cannot (e.g. $\sqrt{2}$).
- Identities: $(a+b)^2 = a^2+2ab+b^2$; $(a-b)^2 = a^2-2ab+b^2$; $a^2-b^2 = (a+b)(a-b)$.
- Factor theorem: $(x-a)$ is a factor of $p(x)$ if $p(a) = 0$.
- Degree of a polynomial is the highest power of the variable.

Coordinate & Euclid Geometry

- A point is written as (x, y) ; x is the abscissa and y is the ordinate.
- Euclid's axioms and postulates are the basis of geometry.
- Two lines are parallel if they never meet; the angle sum of a triangle is 180° .

Triangles & Mensuration

- Congruence rules: SSS, SAS, ASA, AAS and RHS.
- Heron's formula: $\text{area} = \sqrt{s(s-a)(s-b)(s-c)}$, $s = (a+b+c)/2$.
- Surface area and volume formulas for cube, cuboid, cylinder, cone and sphere.
- Area of a circle = πr^2 ; circumference = $2\pi r$.

Statistics & Probability

- Mean = sum of observations / number of observations.
- Median is the middle value; mode is the most frequent value.
- Probability of an event = favourable outcomes / total outcomes.

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