

Class 9 Mathematics

Basic Chapter-Wise Formula Sheet (Free Edition)

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For Quick Revision | CBSE Pattern

1. Number Systems

- $a^m \times a^n = a^{(m+n)}$
- $a^m / a^n = a^{(m-n)}$
- $(a^m)^n = a^{(mn)}$
- $a^0 = 1$ ($a \neq 0$)

2. Polynomials

- $(a + b)^2 = a^2 + 2ab + b^2$
- $(a - b)^2 = a^2 - 2ab + b^2$
- $(a + b)(a - b) = a^2 - b^2$

3. Linear Equations in Two Variables

- General form: $ax + by + c = 0$
- Solution is an ordered pair (x, y)

4. Coordinate Geometry

- Distance Formula = $\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$
- Midpoint Formula = $((x_1 + x_2)/2, (y_1 + y_2)/2)$

5. Triangles

- Sum of angles of triangle = 180°
- Pythagoras Theorem: $\text{Hypotenuse}^2 = \text{Base}^2 + \text{Perpendicular}^2$

6. Quadrilaterals

- Sum of interior angles = 360°

7. Circles

- Perpendicular from centre to chord bisects it

8. Heron's Formula

- $s = (a + b + c)/2$
- $\text{Area} = \sqrt{s(s - a)(s - b)(s - c)}$

9. Surface Areas and Volumes

- Surface Area of Cube = $6a^2$
- Volume of Cube = a^3
- Volume of Cylinder = $\pi r^2 h$

10. Statistics

- Mean = Sum of Observations / Number of Observations

11. Probability

- Probability = Favorable outcomes / Total outcomes
- $0 \leq P(E) \leq 1$