TURBO

Created by students, for students

BASIC MATHEMATICS

Class 11 Mathematics • Complete Formula Sheet

Sr.	Concept	Formulas	Other Information
		ALGEBRAIC FOUNDATIONS	
1	Laws of Indices	$a^m \times a^n = a^{m+n}$ $a^m / a^n = a^{m-n}$ $(a^m)^n = a^{mn}$	Base must be the same for operations.
2	Powers	$(ab)^n = a^n b^n$ $(a/b)^n = a^n / b^n$	Power distribution laws.
3	Surds & Radicals	$\sqrt{a} \times \sqrt{b} = \sqrt{ab}$ $\sqrt{a}/\sqrt{b} = \sqrt{a/b}$	Square root multiplication/division.
4	Square Identities	$(\sqrt{a} \pm \sqrt{b})^2 = a \pm 2\sqrt{ab} + b$	Expansion of radical terms.
5	Logarithms	$\log(ab) = \log a + \log b$ $\log(a/b) = \log a - \log b$	Product and Quotient rules.
6	Log Properties	$\log(a^n) = n \log a$ $\log_b a = \frac{\log a}{\log b}$	Power and Base change rules.
7	Quadratic Eq.	$ax^2 + bx + c = 0$ $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$	$D = b^2 - 4ac$ (Discriminant).
8	Nature of Roots	$D > 0$: Real & Distinct $D = 0$: Real & Equal $D < 0$: Complex Conjugates	Roots based on Discriminant value.
9	Factorization	$a^2 - b^2 = (a - b)(a + b)$ $(a \pm b)^2 = a^2 \pm 2ab + b^2$	Core algebraic identities.
10	Cubic Identities	$a^3 \pm b^3 = (a \pm b)(a^2 \mp ab + b^2)$	Sum/Difference of cubes.
11	Set Cardinality	$n(A \cup B) = n(A) + n(B) - n(A \cap B)$	De Morgan's: $(A \cup B)' = A' \cap B'$.