TURBO

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SET THEORY

Class 11 Mathematics • Complete Formula Sheet

Sr.	Concept	Formulas	Other Information
		SET OPERATIONS	
1	Union Laws	$A \cup B = B \cup A$ $(A \cup B) \cup C = A \cup (B \cup C)$ $A \cup \phi = A, \quad A \cup A = A$	Commutative, Associative, Identity, and Idempotent laws.
2	Intersection Laws	$A \cap B = B \cap A$ $(A \cap B) \cap C = A \cap (B \cap C)$ $A \cap \phi = \phi, \quad A \cap U = A$	Identity for $\cap$ is Universal set U.
3	Distributive Laws	$A \cap (B \cup C) = (A \cap B) \cup (A \cap C)$ $A \cup (B \cap C) = (A \cup B) \cap (A \cup C)$	Distributive property of $\cup$ and $\cap$.
4	Difference	$A - B = A - (A \cap B)$ $A - B \neq B - A$ $A - U = \phi$	If $A \subset B$, then $A - B = \phi$.
5	Complement	$(A')' = A$ $A \cup A' = U, \quad A \cap A' = \phi$ $\phi' = U, \quad U' = \phi$	A' contains elements not in A.
6	De Morgan's	$(A \cup B)' = A' \cap B'$ $(A \cap B)' = A' \cup B'$	Crucial for simplifying sets.
7	Cardinality (2)	$n(A \cup B) = n(A) + n(B) - n(A \cap B)$	If disjoint $(A \cap B = \phi)$, term is 0.
8	Cardinality (3)	$n(A \cup B \cup C) = n(A) + n(B) + n(C)$ $-[n(A \cap B) + n(B \cap C) + n(A \cap C)]$ $+n(A \cap B \cap C)$	General formula for three sets.

TURBO   *Your complete JEE/NEET formula companion*