

TURBO

Created by students, for students

PERMUTATIONS AND COMBINATIONS

Class 11 Mathematics • Complete Formula Sheet

Sr.	Concept	Formulas	Other Information
FUNDAMENTALS			
1	Factorial	$n! = 1 \times 2 \times 3 \times \cdots \times n$	$0! = 1$. Product of first n natural numbers.
2	Permutation (Distinct)	No Rep: ${}^nP_r = \frac{n!}{(n-r)!}$ Rep: n^r	Arrangement of objects. $0 \leq r \leq n$.
3	Permutation (Not Distinct)	$\frac{n!}{p_1!p_2!\cdots p_k!}$	p_1, p_2, \dots are objects of different kinds.
4	Combination	${}^nC_r = \frac{n!}{r!(n-r)!}$	Selection of things. $0 \leq r \leq n$.
PROPERTIES OF nC_r			
5	Symmetry	${}^nC_{n-r} = {}^nC_r$	–
6	Equality	${}^nC_a = {}^nC_b \Rightarrow a = b$ or $a + b = n$	–
7	Pascal's Identity	${}^nC_{r-1} + {}^nC_r = {}^{n+1}C_r$	–

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