

Permutations and Combinations



**Arrangements;
selections**

$${}^nP_r = \frac{n!}{(n-r)!}, \quad {}^nC_r = \frac{n!}{r!(n-r)!}$$

Alike objects

$$\frac{n!}{p! q! \dots}$$

Properties

$${}^nC_r = {}^nC_{n-r}, \quad {}^nC_r + {}^nC_{r-1} = {}^{n+1}C_r$$