

## Permutations and Combinations

$$(1). {}^n P_r = \frac{n!}{(n-r)!}$$

$$(2). {}^n C_r = \frac{n!}{r!(n-r)!}$$

$$(3). {}^n C_0 = 1$$

$$(4). {}^n C_n = 1$$

$$(5). {}^n C_1 = n$$

$$(6). {}^n C_2 = \frac{n(n-1)}{2!}$$

$$(7). {}^n C_3 = \frac{n(n-1)(n-2)}{3!}$$

$$(8). {}^n C_r = {}^n C_{n-r}$$

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