Permutations and Combinations:

The number of ways \( k \) objects can be selected from \( n \) objects and arranged in order is

\[ nP_k = \frac{n!}{(n-k)!} \]

The number of ways \( k \) objects can be selected from \( n \) objects without regard to order is

\[ nC_k = \binom{n}{k} = \frac{n!}{k!(n-k)!} \]