Math 4200:

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

$$ {}_nC_k = \binom{n}{k} = \frac{n!}{k!(n-k)!} $$