

Permutations

An arrangement of objects
in which
order is important
(e.g. locker code).

In other words, a Permutation
is an ordered Arrangement.
**Think "Permutation ...
Position"**

The number of permutations of
 n objects taken r at a time,
where $r \leq n$, is given by

$${}_n P_r = \frac{n!}{(n-r)!}$$

Combinations

A selection of objects
in which
order is not important
(e.g. fruits in a salad).

In other words, Combinations
are about Grouping things.
**Think "Combination ...
Put Together"**

The number of combinations of
 n objects taken r at a time,
where $r \leq n$, is given by

$${}_n C_r = \frac{n!}{(n-r)! \cdot r!}$$