## Permutations

Permutation is an arrangement of objects in which the order matters - without repetition

Type equation here.
${ }_{\mathrm{n}} \mathrm{P}_{\mathrm{r}}$ is read as a permutation of $\boldsymbol{n}$ things taken $r$ at a time.
${ }_{7} \mathbf{P}_{3}$ is read as a permutation of 7 things taken $\mathbf{3}$ at a time.

$$
{ }_{\mathrm{n}} \mathbf{P}_{\mathrm{r}}=\frac{\boldsymbol{n}!}{(\boldsymbol{n}-\boldsymbol{r})!}
$$

