22-11-2020   Unit-8

Counting, Permutation and combinations

Permutation $\Rightarrow$ ^nP_r

$$^nP_r = nPr = \frac{n!}{(n-r)!}$$

$\rightarrow$ choosing & arranging

Combination $\Rightarrow$

$$^nC_r = nCr = \frac{n!}{r!\,(n-r)!}$$

$\rightarrow$ choosing

⇒ **Probability using combinations**

$$P\left(\frac{3}{8}H\right) = \frac{{}^{8}C_3}{2^8} = 0.21875$$

⇒ **Generalized**

$$P\left(\frac{r}{n}H\right) = \frac{{}^{n}C_r}{2^n}$$