

Permutations and Combinations - Probability SHRAYANTH.S

- ① $3! = 6$
- ② 5 ways
- ③ $3! = 3 \times 2 \times 1 = 6$ ways
- ④ $4C_2 = 6$ ways
- ⑤ $1/2$
- ⑥ $1/6$
- ⑦ $3 \times 2 = 6$
- ⑧ $3 + 4 = 7 \Rightarrow 3/7$ (To pick apple)
- ⑨ $4! = 4 \times 3 \times 2 \times 1 = 24$
- ⑩ $3 + 2 = 5$ total
Given $\rightarrow 2$ balls } Probability $\Rightarrow 2/5$
- ⑪ $4 \times 3 \times 2 = 24$
- ⑫ $7C_3 = 35$
- ⑬ $5! = 5 \times 4 \times 3 \times 2 \times 1 = 120$
- ⑭ In 52 we have 4 King $\therefore 4/52$
- ⑮ Total balls = $6 + 4 = 10$
Black Balls = 4
Probability = $4/10 = 2/5$
- ⑯ $4P_3 = 4 \times 3 \times 2 = 24$ different passwords can be done
- ⑰ Occurrence = $\{1, 2, 3, 4, 5, 6\} \rightarrow \{2, 4, 6\}$
3 outcome $\Rightarrow 3/6$
- ⑱ $4C_2 = 6$ ways of choosing 2 letters from maths

- ⑲ 13 hearts in 52 deck
 $13/52 = 1/4$
- ⑳ $(4-1)! = 3! = 6$ ways
- ㉑ Last digit Even $\rightarrow \frac{2}{4}$
Remaining 3 digits from 4
 $\rightarrow 4 \times 3 \times 2 = 24$
 $= 2 \times 24 = 48$
- ㉒ $3 + 4 + 5 = 12$ balls
 $\frac{5}{12} \times \frac{4}{11} = \frac{20}{132} \Rightarrow 5/33$
- ㉓ $5! = 120$
Total arrangement: $\rightarrow 4! \times 2 = 48$
Required = $120 - 48 = 72$
- ㉔ $2W + 2M : 8C_2 \times 10C_2 = 28 \times 45 = 1260$
 $3W + 1M : 8C_3 \times 10C_1 = 56 \times 10 = 560$
 $4W : 8C_4 = 70$
(+) 1890
- ㉕ Possible Pairs :-
 $(1, 6) (2, 5) (3, 4), (4, 3)$
 $(5, 2), (6, 1) = 6$ pairs
(sum is 7)
Total outcome = 36
 $6/36 = 1/6$