

6/10/2020  
TUESDAY

MATHEMATICS

STD - X  
CLASS - 40

Textbook page no. 75

4, 5 questions answers

4. From all two-digit numbers with either digit 1, 2 or 3 one number is chosen.

- i) what is the probability of both digits being the same?
- ii) what is the probability of the sum of the digits being 4?

Ans) Two digit numbers with digits 1, 2 or 3

i)

$$= 11, 12, 13, 21, 22, 23, 31, 32, 33$$

$$\text{Their number} = 9 \text{ (this is } 3 \times 3)$$

$$\text{Numbers with the same digits} = 11, 22, 33$$

$$\text{Their number} = 3$$

$$\therefore \text{Probability of both digits being the same} = \frac{3}{9} = \frac{1}{3}$$

ii) Numbers with the sum of digits 4 = 13, 22, 31

$$\text{Their number} = 3$$

$$\therefore \text{Probability of the sum of the digits being 4} = \frac{3}{9} = \frac{1}{3}$$

5. A game for two players. First, each has to decide whether he wants odd number or even number. Then both raises some fingers of one hand. If the sum is odd, the one who choose odd at the beginning wins; if it is even, the one who chose even wins. In this game, which is the better choice at the beginning, odd or even?

Ans) Pairs of the number of fingers both raises =

$(1,1), (1,2), (1,3), (1,4), (1,5),$

$(2,1), (2,2), (2,3), (2,4), (2,5),$

$(3,1), (3,2), (3,3), (3,4), (3,5),$

$(4,1), (4,2), (4,3), (4,4), (4,5),$

$(5,1), (5,2), (5,3), (5,4), (5,5)$

Total number = 25 (This is  $5 \times 5$ )

Pairs with sum odd =  $(1,2), (1,4), (2,1), (2,3),$   
 $(2,5), (3,2), (3,4), (4,1), (4,3), (4,5), (5,2),$   
 $(5,4)$

Their number = 12

$\therefore$  Probability of getting the sum odd =  $\frac{12}{25}$

Pairs with sum even = 13

$\therefore$  Probability of even =  $\frac{13}{25}$

$\therefore$  Probability of getting the sum even is greater.