ONLINE MATHS CLASS - X - 29 (31 / 08 / 2021)

3 . MATHEMATICS OF CHANCE - CLASS - 2

What did we study in the last class ?

- **The probability of something we have to find is how much part of the total number of results to the number of results favourable to it .**
- $Probability = \frac{Number\ of\ favourable\ results}{Number\ of\ total\ results}$

Activity 1

There are 7 red and 5 blue balls in a bag , 9 red and 7 blue balls in another .

a) What is the probability of getting a red ball from the first bag ?

b) What is the probability of getting a red ball from the second bag ?

c) If all the balls are put in a single bag , what is the probability of getting a red ball from it ?

Answer

a) Number of balls in the first bag $= 7 + 5 = 12$

Probability of getting a red ball $= \frac{Number\ of\ favourable\ results}{Number\ of\ total\ results} = \frac{7}{12}$

b) Number of balls in the second bag $= 9 + 7 = 16$

Probability of getting a red ball $= \frac{Number\ of\ favourable\ results}{Number\ of\ total\ results} = \frac{9}{16}$

c) Total balls in the bag $= 12 + 16 = 28$

Probability of getting a red bal $= \frac{Number\ of\ favourable\ results}{Number\ of\ total\ results} = \frac{7 + 9}{28} = \frac{16}{28} = \frac{4}{7}$

Activity 2

Numbers 1 to 25 are written on slips of paper and put in a box . A slip is to be drawn from it ,

a) What is the probability of getting an even number ?

b) What is the probability of getting an odd number ?

Answer

a) Even numbers = 2 , 4 , 6, 8 , 10 , 12 ,14 , 16 , 18 , 20 , 22 , 24

Number of favourable results = 12

Probability of getting an even number $= \frac{Number\ of\ favourable\ results}{Number\ of\ total\ results} = \frac{12}{25}$

b) Odd numbers = 1 , 3 , 5 , 7 , 9 , 11 , 13 ,15 , 17 , 19 , 21 , 23 , 25

Number of favourable results = 13

Probability of getting an odd number $= \frac{Number\ of\ favourable\ results}{Number\ of\ total\ results} = \frac{13}{25}$

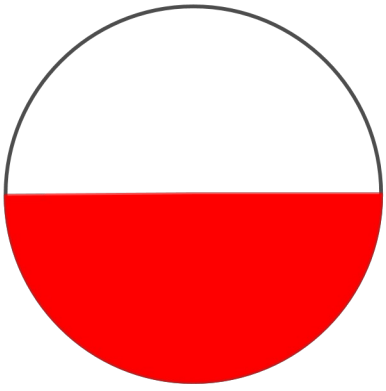
NOTE :

In the above problem ,

$$Probability\ of\ getting\ an\ even\ number + Probability\ of\ getting\ an\ odd\ number = \frac{12}{25} + \frac{13}{25}$$

$$= \frac{25}{25} = 1$$

Activity 2 (Geometrical probability)



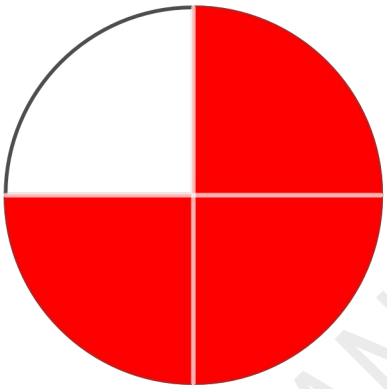
A circle is divided in to two equal parts . Calculate the probability of a dot put , without looking , to be in the red part .

Answer

The area of the red part is $\frac{1}{2}$ of the area of the circle .

Therefore, probability of the dot falling within the red part = $\frac{1}{2}$

Activity 3



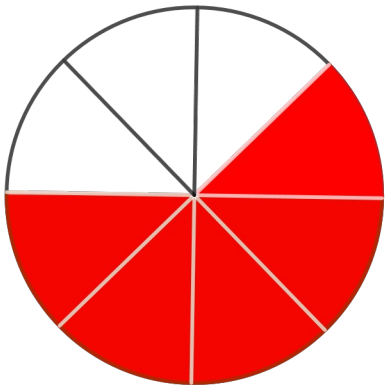
A circle is divided in to four equal parts . Calculate the probability of a dot put , without looking , to be in the red part .

Answer

The area of the red part is $\frac{3}{4}$ of the area of the circle .

Therefore, probability of the dot falling within the red part = $\frac{3}{4}$

Activity 4



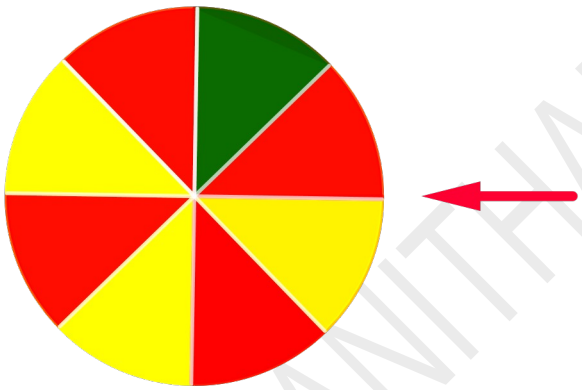
A circle is divided in to eight equal parts . Calculate the probability of a dot put , without looking , to be in the red part .

Answer

The area of the red part is $\frac{5}{8}$ of the area of the circle .

Therefore, probability of the dot falling within the red part = $\frac{5}{8}$

Activity 5



A multicoloured disc spins around on a board . (In the figure a disc is divided into eight equal parts and coloured 8)

Answer

The area of one red part is $\frac{1}{8}$ of the area of the circle . There are 4 red parts .

Therefore, probability of the dot falling within the red part = $\frac{4}{8} = \frac{4 \times 1}{4 \times 2} = \frac{1}{2}$

NOTE :