WS 3.1

MATHEMATICS   **STANDARD:10**

MATHEMATICS OF CHANCE

1. A box contains 10 black and 5 white balls. If a ball is taken from it what is the probability of it being black? And what is the probability of it being white?

Total number of balls in the box   = _____
Total number of **black** balls in the box = _____

Probability of getting a **black** ball   = $\dfrac{number\ of\ black\ balls}{total\ number\ of\ balls}$

= $\dfrac{\_\ \_\ \_\ \_}{\_\ \_\ \_\ \_\ \_}$

Total number of **white** balls in the box = _____

Probability of getting a **white** ball   = $\dfrac{number\ of\ white\ balls}{total\ number\ of\ balls}$

= $\dfrac{\_\ \_\ \_\ \_}{\_\ \_\ \_\ \_\ \_}$

2. Numbers from 1 to 30 are written in paper slips and put in a box. With out looking one slip is taken from it.
 a) What is the probability that it is an even number?
 b) What is the probability that it is a prime number?

a)   Total number of paper slips   = --------
       Even numbers from 1 to 30 are 2, 4, 6,...30
       Total Number of even numbers from 1 to 30 = -------

Probability of getting an even number= $\dfrac{Total\ Number\ of\ even\ numbers}{Total\ Number\ of\ paper\ slips}$

= $\dfrac{\_\ \_\ \_\ \_}{\_\ \_\ \_\ \_}$

   b) The prime numbers between 1 to 30 are 2, 3, 5, 7, 11, 13, 17, 19, 23 and 29.

       Total Number of prime numbers   = _____

Probability of getting a prime number = $\dfrac{Total\ Number\ of\ prime\ numbers}{Total\ Number\ of\ paper\ slips}$

$= \dfrac{-\ -\ -\ -}{-\ -\ -\ -\ -}$

3. There are 18 beads in a box. Some of them are white and the remaining are black. The probability of drawing a black bead from it is $\dfrac{1}{3}$

Then (a) How many black beads are there in the box ?
(b) How many white beads are there in the box ?

(a) Total number of beads = -----(given)
Probability of getting black bead = ----- (given)

Probability of getting black bead = $\dfrac{Number\ of\ black\ beads}{Total\ number\ of\ beads}$

$\dfrac{1}{3}$ = $\dfrac{Number\ of\ black\ beads}{-\ -\ -\ -}$

3 x Number of black beads = 18

Number of black beads = ----
(b) Number of white beads = 18 – ---- = ----

4. In the figure below the length and breadth of the rectangle is 10 cm and 8 cm respectively. If we put a dot inside the rectangle without looking into it, what is the probability that it will be inside the circle?
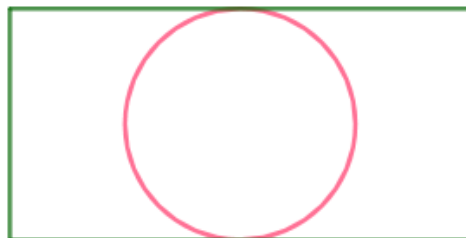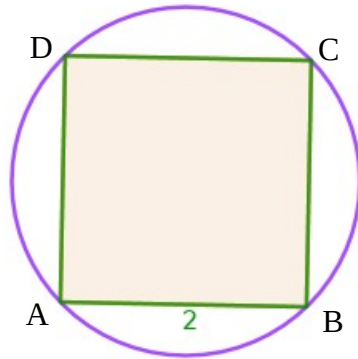
Length of rectangle = ----
Breadth of rectangle = ---
Area of rectangle = ---- x ---- = ----

Radius of the circle = $\dfrac{-\ -\ -\ -}{2}$ = ----

Area of the circle = πr^2 = ---- = ----

Probability = $\dfrac{area\ of\ circle}{area\ of\ rectangle}$ = ----

5. In the figure, what is the probability of a dot we put without looking to be with in the square?

Length of one side of square = ----
Area of the square   = ----
        AB = BC = ----
AC = $\sqrt{AB^2 + BC^2}$ = ---- = ----
Radius of circle = $\dfrac{AC}{2}$ = ----

Area of circle = πr^2 = ---- = ----

Probability of dot with in the square = $\dfrac{area\ of\ square}{area\ of\ circle}$ = ----