CBSE Class 9 Sample Paper
Term 2
Maths

Section A

(2 Marks each)

1. Two coins are tossed simultaneously 500 times, following are the outcomes

No head= 100 times

One head = 200 times

Two heads = 200 times

If the two coins are simultaneously tossed again, compute the probability of obtaining:

(i) One Head

(ii) Two Heads

2. Teachers and students are selected at random to make two teams of 30 members each on sports day to participate in the event of "tug of war". The number of volunteers are as follows:

Teachers		Students	
Male	Female	Male	Female
12	18	20	10

Find the probability that the person chosen at random

(i) is a male

(ii) is a female student.

OR

In a one-day cricket Match, Sachin played 40 balls and hit 12 sixes and Saurav played 30 balls and hit 9 fours. Find the probability that Sachin will hit a six in the next ball and also find the probability that Saurav will not hit a four in the next ball.

3. A rectangular piece of paper is 22 cm long and 10 cm wide. A cylinder is formed by rolling the paper along its length. Find the volume of the cylinder.

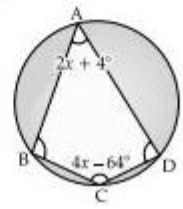
4. The angles of a quadrilateral are $4x°$, $7x°$, $15x°$ and $10x°$. Find the smallest and largest angles of the quadrilateral.

5. If $y = 2$ and $y = 0$ are the zeroes of the polynomial $f(y) = 2y^3 - 5y^2 + ay + b$, find the value of a and b.

6. A chord of length 10 cm is at a distance of 12 cm from the centre of a circle. Find the radius of the circle.

OR

In the given figure, find the value of x.



Section B

(3 Marks each)

7. Find the value of k, if $x - 2$ is a factor of $f(x) = x^2 + kx + 2k$. Also find the factorise of $f(x)$, when putting the value of k.

8. Verify if -2 and 3 are zeroes of the polynomial $2x^3 - 3x^2 - 11x + 6$. If yes, factorize the polynomials.

9. The total surface area of a solid right circular cylinder is 1540 cm^2. If the height is four times the radius of the base, then find the height of the cylinder.

OR

How much ice-cream can be put into a cone with base radius 3.5 cm and height 12 cm ?

10. Construct a ΔPQR in which QR = 6 cm, $\angle Q = 60°$ and PR – PQ = 2 cm.

Section C

(4 Marks each)

11. A chord of a circle is equal to the radius of the circle. Find the angle subtended by the chord at a point on the minor arc and also at a point on the major arc.

12. A metal pipe is 77 cm long. The inner diameter of a cross-section is 4 cm, the outer diameter being 4.4 cm. Find its:

(i) inner curved surface area

(ii) outer curved surface area

(iii) total surface area. (use $\pi = \frac{22}{7}$)

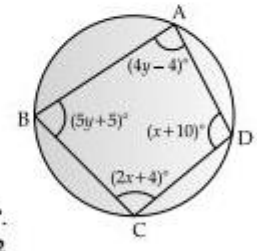
OR

The frame of a lampshade is cylindrical in shape. It has base diameter 28 cm and height 17 cm. It is to be covered with a decorative cloth. A margin of 2 cm is to be given for folding it over top and bottom of the frame. If $\frac{1}{12}$ of cloth is wasted in cutting and pasting, find how much cloth is required to be purchased for covering the frame.

Case Study-1

13. Read the following text and answer the questions given below:

Four boys are playing with a ball in a circular park. The positions of each boy is represented by A, B, C and D in the following diagram.



Give answer the following questions:

(i) Find the values of x and y. **[2]**

(ii) Find $\angle A$ and $\angle B$. Also prove that $\angle A + \angle C = 180°$. **[2]**

Case Study-2

14. Read the following text and answer the questions given below:

National Association for the Blind (NAB) aimed to empower and well-inform visually challenged population of our country, thus enabling them to lead a life of dignity and productivity.

Ravi donated ₹ $\left(x^3 + \frac{1}{x^3}\right)$ to NAB. When his cousin asks to tell the amount donated by him, he just gave ,the hint. $x + \frac{1}{x} = 10$

(i) Find the amount donated by Ravi. **[2]**

(ii) Find the amount donated by Ravi if $x + \frac{1}{x} = 7$. **[2]**