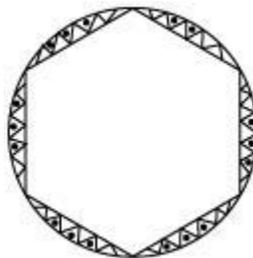


11. Find the point on the x -axis which is equidistant from $(2, -5)$ and $(-2, 9)$.
12. Prove that the tangents drawn at the ends of a diameter of a circle are parallel.
13. The wheels of a car are of diameter 80 cm each. How many complete revolutions does each wheel make in 10 minutes when the car is traveling at a speed of 66 km per hour? [use $\pi = 22/7$]
14. Two types of water tankers are available in a shop. One is in a cubic form of dimensions 1 m x 1 m x 1 m and another is in the form of cylindrical form of diameter 1 m and height is also 1 m. Calculate the volume of both tankers. The shopkeeper advise to purchase cuboid tank. Which value is depicted?

SECTION – C

15. Find the roots of the following quadratic equation, if they exist, by the method of completing the square:
 $2x^2 + x + 4 = 0$.
16. Is it possible to design a rectangular mango grove whose length is twice its breadth, and the area is 800 m^2 ? If so, find its length and breadth.
Or
Find the 31st term of an A.P. whose 11th term is 38 and the 16th term is 73.
17. For what value of n , are the n^{th} terms of two AP's 63, 65, 67, and 3, 10, 17, ... equal?
18. Draw a triangle ABC with $BC = 7 \text{ cm}$, $AB = 6 \text{ cm}$ and $\angle ABC = 60^\circ$. Construct a triangle whose sides are $\frac{3}{4}$ of the corresponding sides of triangle ABC. Also write the steps of construction.
19. Draw a pair of tangents to a circle of radius 5 cm which are inclined to each other at an angle of 60° . Give the justification of the construction.
20. A tree breaks due to storm and the broken part bends so that the top of the tree touches the ground making an angle 30° with it. The distance between the foot of the tree to the point where the top touches the ground is 8 m. Find the height of the tree.
21. A die is thrown once. Find the probability of getting
(i) a prime number;
(ii) a number lying between 2 and 6;
(iii) an odd number.
22. A chord of a circle of radius 10 cm subtends a right angle at the centre. Find the area of the corresponding:
(i) Minor segment
(ii) Major sector. [Use $\pi = 3.14$]
23. A round table cover has six equal designs as shown in figure. If the radius of the cover is 28 cm, find the cost of making the designs at the rate of Rs.0.35 per cm^2 . [Use $\sqrt{3} = 1.7$]

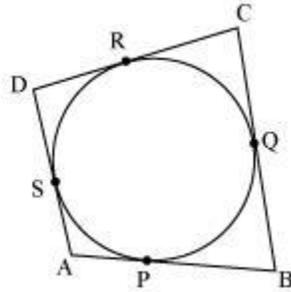


24. A toy is in the form of a cone of radius 3.5 cm mounted on a hemisphere of same radius. The total height of the toy is 15.5 cm. Find the total surface area of the toy. [Use $\pi = 22/7$]

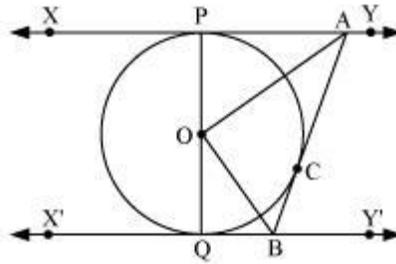
SECTION – D

25. A motor boat whose speed is 9 km/hr. in still water goes 12 km down stream and comes back in a total time 3 hours. Find the speed of the stream? Explain the situation when speed of stream is more than the speed of boat in still water.
26. The sum of the third and the seventh terms of an A.P is 6 and their product is 8. Find the sum of first sixteen terms of the A.P.

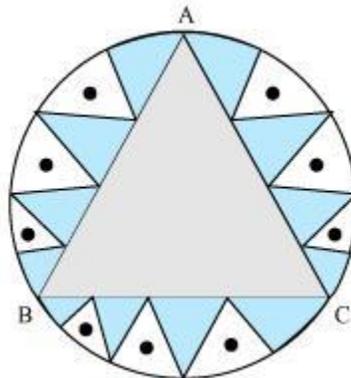
27. If A and B are $(-2, -2)$ and $(2, -4)$, respectively, find the coordinates of P such that $AP = \frac{3}{7}AB$ and P lies on the line segment AB.
28. Determine the ratio in which the line $2x + y - 4 = 0$ divides the line segment joining the points A(2, -2) and B(3, 7).
29. A quadrilateral ABCD is drawn to circumscribe a circle (see given figure) Prove that $AB + CD = AD + BC$



30. In the given figure, XY and X'Y' are two parallel tangents to a circle with centre O and another tangent AB with point of contact C intersecting XY at A and X'Y' at B. Prove that $\angle AOB = 90^\circ$.



31. From the top of a 7 m high building, the angle of elevation of the top of a cable tower is 60° and the angle of depression of its foot is 45° . Determine the height of the tower.
32. A box contains 90 discs which are numbered from 1 to 90. If one disc is drawn at random from the box, find the probability that it bears
- a two-digit number
 - a perfect square number
 - a number divisible by 5.
33. In a circular table cover of radius 32 cm, a design is formed leaving an equilateral triangle ABC in the middle as shown in the given figure. Find the area of the design (Shaded region). [Use $\pi = 22/7$]



34. A farmer connects a pipe of internal diameter 20 cm from a canal into a cylindrical tank in her field, which is 10 m in diameter and 2 m deep. If water flows through the pipe at the rate of 3 km/h, in how much time will the tank be filled?

ANSWERS:-

1. B
2. C
3. B
4. D
5. A
6. B
7. D
8. B
9. $2x^2 + x - 528 = 0$ or $-\frac{5}{\sqrt{2}}, -\sqrt{2}$
10. 16
11. $(-7, 0)$
- 12.
13. 4375
14. *vol. of cubic tanker = $1m^3$ and vol. of cylindrical tanker = $\frac{\pi}{4}m^3$. This shows the helping nature of the shopkeeper.*
15. *do not exist*
16. *yes, 40m, 20m Or 178*
17. 13
- 18.
- 19.
20. $8\sqrt{3} m$
21. (i). $\frac{1}{2}$ (ii). $\frac{1}{2}$ (iii). $\frac{1}{2}$
22. (i). $28.5 cm^2$ (ii). $235.5 cm^2$
23. *Rs. 162.68*
24. $214.5 cm^2$
25. $\frac{3km}{hr}$
26. 20, 76
27. $(-\frac{2}{7}, -\frac{20}{7})$
28. 2 : 9
- 29.
- 30.
31. $7(\sqrt{3} + 1)m$
32. (i). $\frac{9}{10}$ (ii). $\frac{1}{10}$ (iii). $\frac{1}{5}$
33. $(\frac{22528}{7} - 768\sqrt{3}) cm^2$
34. 100 min.