CBSE Class 10th Sample Paper

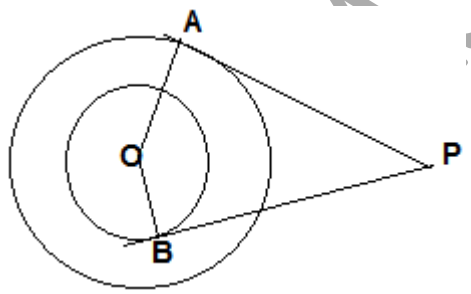
Mob 99-1515-1771

SECTION - A

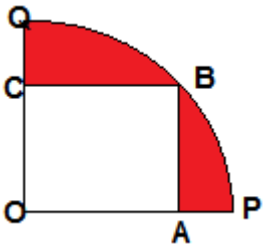
1. Seven times the 7th term of the A.P. is equal to 11 times the 11th term of the A.P. What will be its 18th term.
2. At one end A of a diameter AB of a circle of radius 5 cm, tangent XAY is drawn to the circle. The length of the chord CD || to XY & at a distance 8 cm from A is____.
3. PQ is tangent at a point R to the circle with centre O. If $\angle TRQ=30^0$, find $m\angle PRS$
4. The length of the shadow of a tower on the plane ground is √3 times the height of the tower. Find the angle of elevation of the sun.
5. If two different dice are rolled together, Find the probability of getting an even number on both dice,
6. A number is selected from the numbers 1 to 30. Find the probability that it is prime number.
7. The area of Δ whose vertices A(a, b+c), B(b, c+a) & C(c, a+b) is
8. The ratio of surface areas of two spheres is 16 : 9 What will be the ratio of the volumes?

SECTION – B

9. Find the quadratic equation whose one root is (3-√5).
10. Four numbers are inserted between the numbers 4 & 39 such that an A.P. results. Find the greatest of the four numbers.
11. There are two concentric circles with centre O & radii 5 cm & 3 cm. PA & PB are tangents to these circles from an external point P. If PA=12cm, Find the length of PB.

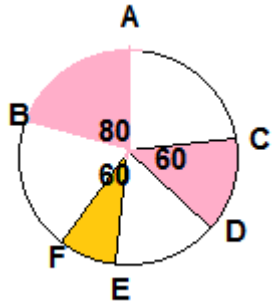


12. If from an external point P of a circle with centre O, two tangents PQ & PR are drawn, such that $\angle QPR=120^0$, Prove that 2PQ=PO
13. If the 7th term of the A.P. is 1/9 & its 9th term is 1/7, find the 63rd term.
14. A square OABC is inscribed in a quadrant OPBQ of a circle. If OA=20cm, Find the area of the shaded region {π=3.14}

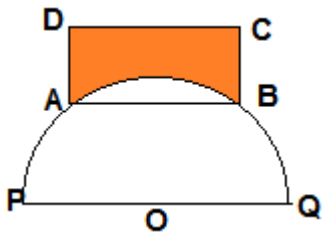


SECTION - C

15. If the roots of the equation $x^2 + px + 12 = 0$ are in the ratio 1 : 3, then p=___.
16. If α, β are the roots of the equation $ax^2 + bx + b = 0$ then $\sqrt{\frac{\alpha}{\beta}} + \sqrt{\frac{\beta}{\alpha}} + \sqrt{\frac{b}{a}}$ is
17. Draw a right Δ ABC in which AB=6cm, BC=8cm & $\angle B = 90^0$. Draw BD ⊥ from B on AC & draw a circle passing through the points B, C & D. Construct tangents from A to this circle.
18. A straight highway leads to the foot of the tower. A man standing at the top of the tower observes a car at an angle of depression of 30^0, which is approaching the foot of the tower with a uniform speed. Six min. later, the angle of depression of the car is found to be 60^0. Find the total time taken by the car to reach the foot of the tower.
19. If the points (a, 0), (0, b) & (1, 1) are collinear, show that $\frac{1}{a} + \frac{1}{b} = 1$.
20. If the points A(-2, 1), B(a, b) & C(4, -1) are collinear & a – b = 1, Find the value of a & b.
21. Three sectors of a circle of radius 7 cm, making angles of 60^0, 80^0, 40^0. At the centre are shaded. Find the area of the shaded region.



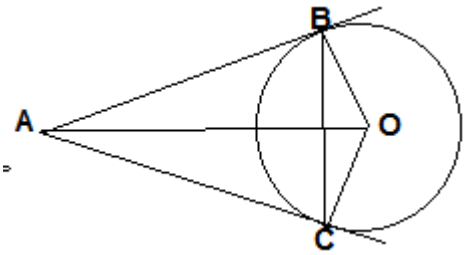
22. ABCD is a rectangle in which AB=20cm & BC=10cm. A semi-circle is drawn with centre atr O & radius 10√2cm. It passes through A & Bas shown in fig. Find the area of the shaded region. **{π=3.14}**



23. A farmer connects a pipe of internal diameter 20 cm from a canal into a cylindrical tank which is 10 m in diameter & 2 m deep. If the water flows through the pipe @ 4 km per hour, in how much time will the tank be filled completely?
24. A solid metallic cone 20 cm high & whose vertical angle is 600, is cut into two parts at the middle of its height by the plane parallel to the base. If the frustum so obtained be drawn into a wire of diameter $\frac{1}{12}$ cm , find the length of the wire.

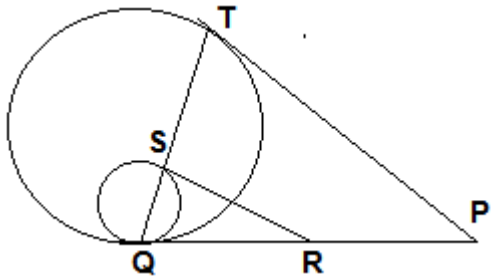
SECTION - D

25. One pipe can fill a cistern in (x+2)hours & the other pipe can fill the cistern in (x+7)hours . If both the pipes, when opened together takes 6 hours to fill the empty cistern, find the value of 'x'
26. OA is equal to the diameter of the circle, Prove that ABC is equilateral triangle.



27. The angle of elevation θ of the top of a light house, as seen by a person on the ground, is such that tan θ = $\frac{5}{12}$. When the person moves a distance of 240m towards the light house, the angle of elevation becomes ϕ such that tan ϕ= $\frac{3}{4}$. Find the length of the light house.
28. In an A.P. of 50 terms, the sum of first 10 terms is 210 & the sum of its last 15 terms is 2565. Find the A.P.
29. If P & Q are two points whose coordinates are $(at^2, 2at)$ & $\left(\frac{a}{t^2}, \frac{-2a}{t}\right)$ respectively & S is the point (a, 0) Show that $\frac{1}{SP}+\frac{1}{SQ}$ is independent of t.

30. A vessel is in the form of inverted cone , open at the top, of height 11 cm & the tradius iof the top is 2.5 cm & isd full of water. Metallic spherical balls each of diameter 0.5 cm are put in the vessel due to which $2/5^{th}$ of the water in the vessel flows out Find how many balls are put in the vessel . The water flows out is used to irrigate the flower bed. Write the values shown here.
31. The difference between the inner & outer curved surface of a hollow cylinder 14 cm long, is 88 cm^2. If the volume of the metal used in making the cylinder is 176 cm^3. Find the inner & outer diameter of the cylinder.
32. Two customers Shyam & Ekta are visiting a particular shop on the week days Tuesday to Saturday. Each is equally likely to visit the shop on any day as on another day. What is the probability that both will visit the shop on (i) The same day (ii) Consecutive days (iii) Different days.
33. PQ is common tangent to both the circles SR & PT are tangents. If SR = 4 cm PT = 7 cm, then find RP.



34. At 8 am. There are **8** people waiting in a queue outside a ration shop. 4 people join them after 1 min. The number of persons joining the queue per minute increases @ two persons per minute i.e. In the second minute 6 more persons will join the queue, in the **3rd** min. **8** more people & so on. The shop opens at **8.20** a.m. & distributes the ration which are available for 300 people only. How many people have to return empty handed if more people stop coming at **8.20** sharp.
35. If a, b, c, d, & e are in AP Find the value of a - 4b + 6c - 4d + e.
36. If the sum of m terms of the AP is same as the sum of n terms. Show that the sum of (m+n) terms is zero.

Find the area grazed by 3 horses of they are tied at 3 vertices of a Δ with rope of length 7 m each. The sides of given Δ are 20 m, 30m & 40m.

ALL THE BEST