



## STANDARD 7<sup>TH</sup>: CHAPTER 11

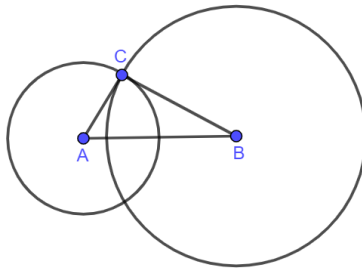
### Circle

#### Q.1. Choose the correct alternative

1. The smallest possible circle, touching two opposite sides of a rectangle, is cut out from a rectangle of area 60 sq units. If the area of the circle is 1.5 times the uncut area left in the rectangle, find the diameter of the circle.

- $12/\sqrt{\pi}$  units
- $6/\sqrt{\pi}$  units
- $4/\pi$  units
- $6/\sqrt{\pi}$  units

2. In the figure AC and BC are radii of circles. The length of AB is 8. If AC=4, what is length of BC?

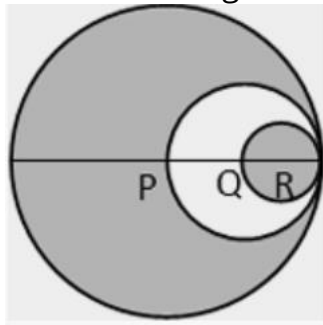


- 5
  - $\frac{5}{2}$
  - $4\sqrt{3}$
  - 3
3. Two Circles with same centre P have radii 6.5cm and 3.3cm. Through a point A of the larger circle, a tangent is drawn to the smaller circle touching it at B. Find AC.
- 8.2 cm
  - 11.2 cm
  - 7.5 cm
  - 9.5 cm

4. Find the area of the circle having centre (5,7) and passing through (2,3).

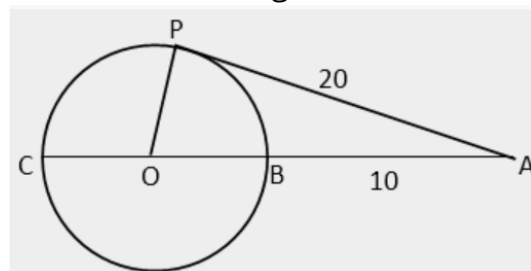
- a.  $23\pi$
- b.  $24\pi$
- c.  $25\pi$
- d.  $26\pi$

5. In the figure P, Q and R are the centres of 3 circles such that P, Q and R are collinear. What is the ratio of the area of the entire shaded region to the area of the unshaded region?



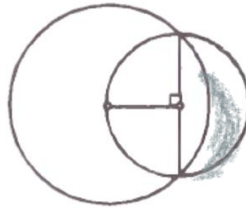
- a. 13:3
- b. 12:2
- c. 13:2
- d. 12:3

6. AP is tangent at a point P to the circle with centre O and diameter BC. If AP=20 and AB=10, What is the length of AO?



- a. 35
- b. 15
- c. 10
- d. 25

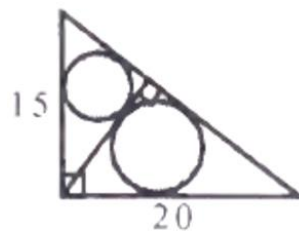
7. The distance between the centres of the circles is  $1\text{ cm}$ . Find the area of the shaded region.



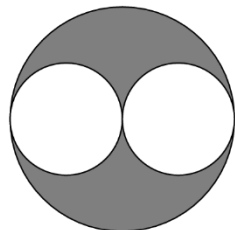
- a.  $\pi \text{ cm}^2$   
b.  $1 \text{ cm}^2$   
c.  $\frac{1}{2} \text{ cm}^2$   
d.  $2 \text{ cm}^2$
8. Two small circular parks of diameters  $32\text{ m}$  and  $24\text{ m}$  are to be replaced by a bigger circular park. What would be the radius of this new park, if the new park has the same area as the two parks?
- a.  $5 \text{ sq. m}$   
b.  $10 \text{ sq. m}$   
c.  $15 \text{ sq. m}$   
d.  $20 \text{ sq. m}$
9. A chord of  $48 \text{ cm}$  is  $7 \text{ cm}$  from the center of a circle. Calculate the area of the circle.
- a.  $625\pi$   
b.  $600\pi$   
c.  $525\pi$   
d.  $125\pi$
10. If the circumference of a circle is  $176 \text{ cm}$ , find its radius.
- a.  $24\text{ cm}$   
b.  $28\text{ cm}$   
c.  $26\text{ cm}$   
d.  $27\text{ cm}$

**Q. 2. Solve the following**

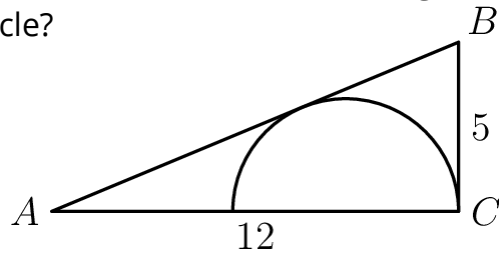
1. Two concentric circles have radii of 5 cm and 3 cm, respectively. Find the length of the chord of the larger circle that touches the smaller circle.
2. Prove that tangents drawn at the ends of a diameter of a circle are parallel?
3. The radius of a circular garden is 56 m. What would it cost to put a 4-round fence around this garden at a rate of 40 rupees per metre?
4. The wheel of a bullock cart has a diameter of 1.4 m. How many rotations will the wheel complete as the cart travels 1.1 km?
5. What is the ratio of the area of the small inscribed circle to that of the large inscribed circle?



6. Evaluate the area of the circle inside the square, having each side measuring 20 cm.
7. Prove that Tangents which meet at the same point are equal in length.
8. In the diagram below, a diameter of each of the two smaller circles is a radius of the larger circle. If the two smaller circles have a combined area of 1 square unit, then what is the area of the shaded region, in square units?



9. In the right triangle  $ABC$ ,  $AC = 12$ ,  $BC = 5$ , and angle  $C$  is a right angle. A semicircle is inscribed in the triangle as shown. What is the radius of the semicircle?



10. Two circles that share the same centre have radii 10 meters and 20 meters. An aardvark runs along the path shown, starting at  $A$  and ending at  $K$ . How many meters does the aardvark run?

