

(MCQ Set-I)

- Q1. Find the distance (in meters) covered by a wheel of diameter 35cm, in one revolution:- (a) 110m (b) 11m (c) 1.1m (d) 2.2m
- Q2. The number of revolutions made by a circular wheel of radius = 0.7m, in rolling a distance of 176m, is (a) 20 (b) 60 (c) 40 (d) None
- Q3. The diameter of a wheel is 14m. The no. of revolutions it will make a distance of 11km will be (a) 300 (b) 250 (c) 200 (d) None
- Q4. Find the no. of revolutions made by a car wheel having diameter 14cm, in covering a distance of 11km (a) 250 (b) 2500 (c) 25000.
- Q5. In making 500 revolutions, a wheel covers 88km. Then diameter of wheel is (a) 14m (b) 28m (c) 56m (d) None of these
- Q6. In making 40 revolutions, a wheel covers a distance of 176m. Then radius of a wheel is (a) 7m (b) 70m (c) 0.7m (d) None
- Q7. If the distance covered by the wheel is 1.1m, in one revolution, then radius of the wheel (in cm) will be (a) 35cm (b) 17.5cm (c) 17m (d) None
- Q8. The number of revolutions made by a circular wheel of area 1.54m^2 , in rolling a distance of 176m, is (a) 20 (b) 60 (c) 40 (d) None
- Q9. If a wheel makes one complete revolution, then angle made by the wheel is (a) 90° (b) 180° (c) 270° (d) 360°
- Q10. If a wheel makes one complete revolution then which is true - (a) $\frac{1}{2}\pi R^2$ (b) $\frac{1}{2}\pi R$ (c) $4\pi R$ (d) $2\pi R$
- Q11. Given that perimeter & the area of a circle are numerically equal then value of \sqrt{R} is (a) 2 (b) $(2)^{0.5}$ (c) $(2)^{0.25}$ (d) None
- Q12. If the circumference & the area of circle are numerically equal then ~~radius~~ diameter is (a) 2 (b) $\sqrt{2}$ (c) 6 (d) None
- Q13. If the circumference of a circle = to the perimeter of square, then $\frac{\text{Area of square}}{\text{Area of circle}}$ (a) 11:14 (b) 14:11 (c) 7:22 (d) None

Q14. If the sum of the areas of 2 circles with radii R_1 & R_2 is equal to the area of a circle of radius R then which is true.

- (a) $R_1^2 + R_2^2 = R$ (b) $R_1^2 + R_2^2 + 2R = 0$ (c) $\sqrt{R_1^2 + R_2^2} = R$ (d) None

Q15. The difference between the circumference & radius of a circle is ~~88cm~~ 74cm. Then the circumference of a circle is \rightarrow (a) 44cm (b) 88cm (c) 22cm (d) None

Q16. If the ratio of the circumference of 2 circles is 1:3. Then ratio of their areas will be \rightarrow (a) 1:3 (b) 3:1 (c) 1:9 (d) 9:1

Q17. If the circumference of a circle & perimeter of a square are equal then which relation holds true \rightarrow (a) Area of circle = Area of square. (b) Area circle > Area square (c) Area circle < Area square (d) None

Q18. Given that 'r' be the radius of a circle. Then perimeter of semicircle is \rightarrow (a) $\pi r + 2r$ (b) $r(2 + \pi)$ (c) $\pi(r + 2r)$ (d) $r(2 + \pi)$

Q19. If the diameter of the semicircular protractor is 28cm. Then perimeter is \rightarrow (a) 36cm (b) 18cm (c) 72cm (d) None

Q20. If the circumference of the protractor is 72cm. then diameter is \rightarrow (a) 14cm (b) 28cm (c) 72cm (d) None

Q21. The area of the circle is $529\pi \text{ m}^2$. Then circumference is given by \rightarrow (a) 28π (b) 12π (c) 46π (d) None

Q22. If the difference between the circumference & radius of the circle is 37cm. Find the area of circle \rightarrow (a) 77 cm^2 (b) 154 cm^2 (c) 37 cm^2 (d) None

Q23. The area of a square is same as the area of ~~square~~ circle. Then perimeters are in the ratio of (a) $2:\pi$ (b) $2\sqrt{\pi}:1$ (c) $\sqrt{\pi}:2$ (d) $2:\sqrt{\pi}$ (e) None

Q24. The radius of a wheel is 0.25m. How many revolutions will it make in covering 11km? (a) 700 (b) 70 (c) 7000 (d) None

Q25. The wheel of a bike is of diameter 70cm. How many revolutions per minute must the wheel make so as to maintain the speed of 66km/hr? (a) 5346 (b) 50 (c) 5000 (d) 500 (e) None

AREAS RELATED TO CIRCLES.

MCQ Set-2

(PULKIT JAWA)

Q1. The area of a sector of a circle having radius 'r' and central angle θ is

- (a) $\frac{2\pi r\theta}{360^\circ}$ (b) $\frac{\pi r\theta}{360^\circ}$ (c) $\frac{2\pi r^2\theta}{720^\circ}$ (d) None of these

Q2. The length of the arc of a sector is given by

- (a) $\frac{\pi r\theta}{360^\circ}$ (b) $\frac{\pi r^2\theta}{360^\circ}$ (c) $\frac{2\pi r\theta}{360^\circ}$ (d) None of these

Q3. The area of the quadrant of a circle is given by.

- (a) $\frac{1}{2}\pi r^2$ (b) $\frac{1}{8}\pi r^2$ (c) $\frac{1}{4}\pi r^2$ (d) None of these

Q4. Angle described by the minute hand in 1 hour will be —

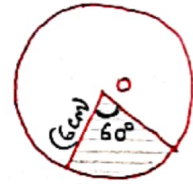
- (a) 90° (b) 180° (c) 270° (d) 360° (e) None

Q5. The circumference of a circle is 22cm. Then area of its quadrant is —

- (a) $\frac{77}{2} \text{cm}^2$ (b) $\frac{77}{4} \text{cm}^2$ (c) $\frac{77}{6} \text{cm}^2$ (d) $\frac{77}{8} \text{cm}^2$

Q6. In this figure of circle with centre O. The area of shaded portion will be —

- (a) 18.8cm^2 (b) 6.28cm^2 (c) 18cm^2 (d) None

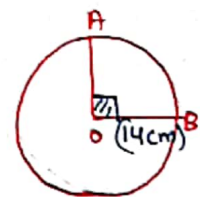


Q7. In the above figure of Q6. Find the area of unshaded portion.

- (a) 94.34cm^2 (b) 18.8cm^2 (c) 6.28cm^2 (d) None

Q8. In this figure of a circle with centre O. Find the length of an arc of this shown sector (Quadrant)

- (a) 22cm (b) 11cm (c) 33cm (d) None



Q9. Find the radius of a circle if area of a sector = 3π sq. units with $\theta = 60^\circ$

- (a) $6\sqrt{2}$ (b) $3\sqrt{2}$ (c) $5\sqrt{2}$ (d) None

Q10. Region enclosed between the chord & arc of a circle is called —

- (a) Segment (b) Sector (c) Length of the arc (d) None

Q11. The area of a sector of circle having diameter 14cm. with central angle = 90°

- (a) 38.5cm^2 (b) 77cm^2 (c) 22.5cm^2 (d) None

Q12. Find the area of quadrant of a circle whose circumference is (7π) .
 (a) $9\frac{5}{8}\text{cm}^2$ (b) $7\frac{5}{8}\text{cm}^2$ (c) $1\frac{5}{8}\text{cm}^2$ (d) None

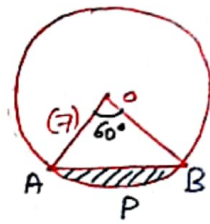
Q13. Find the area of a sector of a circle with radius = 4cm. along with the central angle 45° . (a) π (b) 3π (c) 2π (d) None

Q14. In a circle of radius 21cm, an arc subtends an angle of 60° at the centre. Then length of an arc is — (a) 11cm (b) 22cm (c) 33cm (d) 44cm

Q15. In a circle of radius 21cm, an arc centre. (Refer Q14). find Area of the sector formed by the arc. (a) 121cm^2 (b) 222cm^2 (c) 213cm^2 (d) 231cm^2

Q16. In this figure of circle with centre 'O' and radius 7cm. find the area of shaded region.

(a) $\left(\frac{77}{3} - \frac{49\sqrt{3}}{4}\right)\text{cm}^2$ (b) $\left(\frac{49\sqrt{3}}{4} - \frac{77}{3}\right)\text{cm}^2$ (c) $\left(\frac{77-49\sqrt{3}}{12}\right)\text{cm}^2$



Q17. A chord AB of a circle of radius 20cm, subtends a right angle at the centre. The area of the minor segment will be. (Use $\pi = 3.14$)
 (a) 114cm^2 (b) 214cm^2 (c) 314cm^2 (d) None

Q18. A chord AB of a circle of radius 7cm. subtends a right angle at the centre. The area of the minor sector is. (a) 38.5cm^2 (b) 35.8cm^2 (c) 33.8cm^2

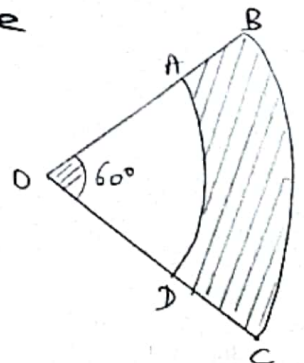
Q19. The area of a sector is one-fourth of the area of circle. Then sector angle is —
 (a) 180° (b) 90° (c) 360° (d) Can't determine

Q20. The length of the arc of a quadrant of a circle is —
 (a) $\frac{2\pi R\theta}{360}$ (b) $\frac{\pi R\theta}{360}$ (c) $\frac{\pi R}{4}$ (d) $\frac{\pi R}{2}$

Q21. If radius of the sector is 'r' and length of the arc is 'l'. Then area of sector is (a) $2lr$ (b) $\frac{lr}{4}$ (c) $\frac{lr}{2}$ (d) None

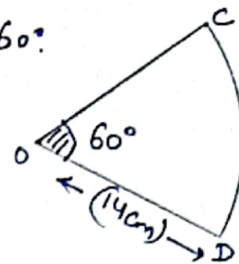
Q22. In the given figure find the area of shaded region if $\angle AOD = \angle BOC = 60^\circ$, $OA = 4\text{cm}$, $OD = 4\text{cm}$ & $OB = 5\text{cm}$ & $OC = 5\text{cm}$.

(a) $\frac{4\pi}{2}$ (b) $\frac{5\pi}{2}$ (c) $\frac{3\pi}{2}$ (d) None



Q23. If the ~~radius~~ area of a circle is numerically equal to its circumference. then diameter = ?? (a) 1 (b) $\sqrt{2}$ (c) 2 (d) 4

Q24. In this figure of sector ODC, having sector angle = 60° . find the perimeter of sector COD.



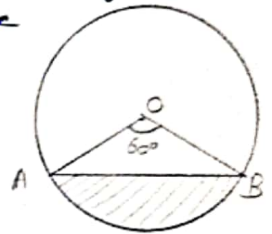
(a) $\frac{84}{3}$ cm (b) $\frac{64}{3}$ cm (c) $\frac{128}{3}$ cm (d) None

Q25. find the area of the sector of a circle of radius 3.5 cm, if its perimeter of a sector is 29 cm. (a) $\frac{52}{7}$ cm² (b) $\frac{77}{7}$ cm² (c) $\frac{77}{2}$ cm² (d) None

Q26. The area of a sector whose perimeter is four times its radius 'R'. Then is \Rightarrow (a) $\frac{R^2}{2}$ (b) $2R^2$ (c) $4R^2$ (d) R^2 (e) None

Q27. The length of an arc of a sector of radius 'R' having central angle (α) is (a) $\frac{2\pi R \alpha}{180^\circ}$ (b) $\frac{\pi R^2 \alpha}{360^\circ}$ (c) $\frac{2\pi R \alpha}{360^\circ}$ (d) None of these

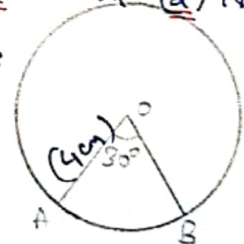
Q28. find the area of the shaded region. given that OA = 4 cm. Sector angle = 60° . and (Take $\sqrt{3} = 1.73$).



(a) 1.46 cm² (b) 2.46 cm² (c) 3.46 cm² (d) None

Q29. The diameter of a circle whose area is equal to the sum of areas of the 2 circles of radii 24 cm & 7 cm. (a) 25 cm (b) 15 cm (c) 50 cm (d) None

Q30. In this figure of circle with centre 'O'. The area of sector is (a) $\frac{2\pi}{3}$ (b) $\frac{4\pi}{3}$ (c) $\frac{5\pi}{3}$ (d) None



Q31. In the same figure of circle of previous question [Q30].

The area of corresponding major sector is (a) $\frac{16\pi}{3}$ (b) $\frac{44\pi}{3}$ (c) $\frac{18\pi}{3}$ (d) None

Q32. Area of a sector of a circle is one-sixth of the area of a circle. find the degree of measure of its minor arc. (a) 30° (b) 60° (c) 45° (d) 30° .

Q32. Area of a sector circle. find the degree of measure of its major arc. (a) 60° (b) 180° (c) 360° (d) 300° (e) None.

Q34. If π is $\frac{22}{7}$, find the distance (in m) covered by a wheel of diameter 35 cm in 2 revolutions is \rightarrow (a) 1.1 m (b) 22 m (c) 0.22 m (d) None

Q35. If the circumference of the circle is increased from 2π to 4π . Then which is true
(a) New Area = $\frac{1}{4}$ Old Area (b) $4(\text{New Area}) = (\text{Old Area})$ (c) New Area = $4 \times (\text{Old Area})$

Q36. If the circumference of the circle is increased from 4π to 8π then its area is \rightarrow (a) Halved (b) Doubled (c) Tripled (d) Quadrupled.

Q37. If the diameter of a circle is increased by 40%. Then its area is increased by -
(a) 86% (b) 96% (c) 46% (d) None of these

Q38. If the radius of the circle is diminished by 10%. Then area is diminished by \rightarrow (a) 10% (b) 29% (c) 39% (d) 19%

Q39. If the circumference of a circle is increased by 50%. then its area is increased by \rightarrow (a) 50% (b) 115% (c) 251% (d) 125%

Q40. On decreasing the diameter of circle by 20% then area is decreased by?
(a) 40% (b) 36% (c) 63% (d) None

Q41. The circumference of a circle is 100cm. The side of a square inscribed in the circle is (a) $\frac{100}{\pi}$ (b) $\frac{100}{2\pi}$ (c) $\frac{50\pi}{\sqrt{2}}$ (d) $\frac{50\sqrt{2}}{\pi}$ (e) None of these

Q42. A square is circumscribed by a circle, find the perimeter of the square if the radius of the circle is 50cm. (a) 20cm (b) 10cm (c) $20\sqrt{2}$ cm (d) None

Q43. The area of a circle that can be inscribed in a square of side 24cm is \rightarrow
(a) 12π (b) 24π (c) $(12)^2\pi$ (d) None

Q44. A square is circumscribed by a circle of radius 4cm. Then area of square is.
(a) 16cm^2 (b) 32cm^2 (c) 28cm^2 (d) None

Q45. The area of a circle inscribed in a square of side x cm is \rightarrow
(a) $\frac{x^2\pi}{2}$ (b) $\frac{x^2\pi}{8}$ (c) $\frac{x\pi}{4}$ (d) None of these

Q46. If the circumference of 2 circles are equal, then their corresponding areas will
(a) Not equal (b) Equal (c) Area of first one $>$ Area of 2nd one (d) None

Q47. If all the vertices of a Rhombus lies on a circle. Then the area of the rhombus if it is given that area of a circle is 628m^2 . (Use $\pi = 3.14$)
(a) 800m^2 (b) 200m^2 (c) 400m^2 (d) None

Q48. A rhombus is circumscribed by a circle of radius 5cm. Then perimeter of Rhombus is \rightarrow (a) $20\sqrt{2}$ cm (b) $10\sqrt{2}$ cm (c) $5\sqrt{2}$ cm (d) None

Q49. Area of largest triangle that can be inscribed in a semicircle of radius 5cm.

- (a) 10cm^2 (b) 100cm^2 (c) 20cm^2 (d) 25cm^2

Q50. A minute hand of a clock is 42cm long. The distance covered by the tip of the minute hand in 10 minutes is \rightarrow (a) 21cm (b) 42cm (c) 44cm (d) None

Q51. A minute hand of a clock is 21cm. The distance covered by the tip of the minute hand in 20 minutes is \rightarrow (a) 21cm (b) 42cm (c) 44cm (d) None

Q52. The area swept by the 7cm long minute hand in 5 minutes is \rightarrow
(a) $\frac{77}{6}\text{cm}^2$ (b) $\frac{77}{3}\text{cm}^2$ (c) $\frac{77}{8}\text{cm}^2$ (d) None of these

Q53. The length of the minute hand of a clock is 14cm. Then area swept by the minute hand in 25min. is \rightarrow (a) $\frac{700}{3}\text{cm}^2$ (b) $\frac{770}{3}\text{cm}^2$ (c) $\frac{77}{3}\text{cm}^2$ (d) None

Q54. A car has 2 wipers, which do not overlap. Each wiper has a blade of length 25cm sweeping through an angle of 115° . Then the total area cleaned at each sweep of the blades is \rightarrow (a) $\frac{158125}{126}\text{cm}^2$ (b) $\frac{158215}{126}\text{cm}^2$ (c) $\frac{158125}{125}\text{cm}^2$ (d) None

Q55. If the diameter of the circle and length of the each side of equilateral Δ are equal. Then find the ratio of the area of circle to the area of equilateral Δ .
(a) $\sqrt{3}:\pi$ (b) $\pi:\sqrt{3}$ (c) $\pi:3$ (d) $3:\pi$

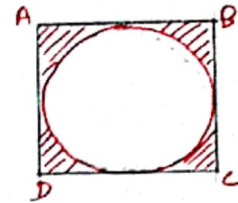
Q56. A pendulum swings through an angle of 30° , & describes an arc of 8.8cm in length. The length of the pendulum is \rightarrow (a) 16cm (b) 16.5cm (c) 16.8cm (d) None

Q57. An arc of a circle of length is $(5\pi)\text{cm}$ & the sector it bounds has an area of $(20\pi)\text{cm}^2$. Then radius of the circle is \rightarrow (a) 1cm (b) 5cm (c) 8cm (d) None

Q58. A cow is tied with a rope of length 14m at the corner of a rectangular field of dimensions $20\text{m} \times 16\text{m}$. Then area of the field in which cow can graze
(a) 145m^2 (b) 154m^2 (c) 160m^2 (d) None.

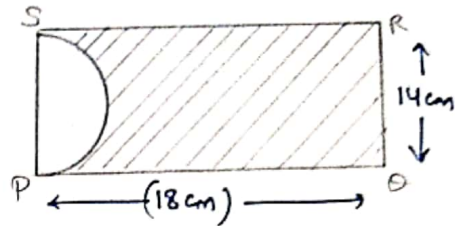
AREAS RELATED TO CIRCLES

Q1. In this given figure, find the area of shaded region.
Given that radius of circle is 14cm.
(a) 1680cm^2 (b) 168cm^2 (c) 84cm^2 (d) None

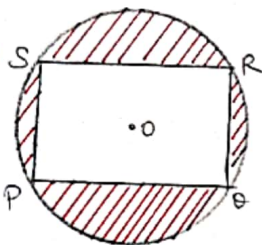


Q2. A paper is in the form of a rectangle ABCD in which $AB=10\text{cm}$, $BC=7\text{cm}$. A semi-circular disc (with BC as a diameter) is cut off. Then area of the remaining portion is (a) $\frac{200}{4}\text{cm}^2$ (b) $\frac{203}{4}\text{cm}^2$ (c) $\frac{77}{4}\text{cm}^2$ (d) None

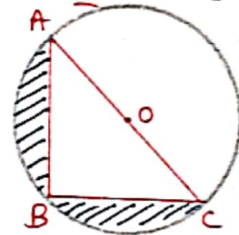
Q3. In this figure of rectangle PQRS. $PQ=18\text{cm}$, $RS=14\text{cm}$. The area of shaded portion is → (a) 165cm^2 (b) 145cm^2 (c) 175cm^2 (d) None



Q4. PQRS is a rectangle inscribed in a circle. If $PQ=16$ & $RS=12\text{cm}$. Then area of shaded portion is $(\pi=3.14)$
(a) 122cm^2 (b) 1064cm^2 (c) 314cm^2 (d) None

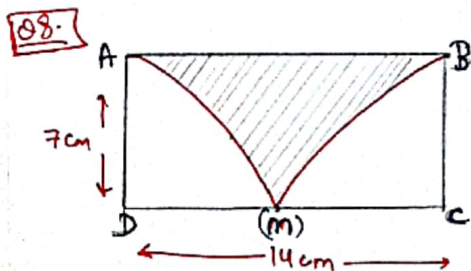
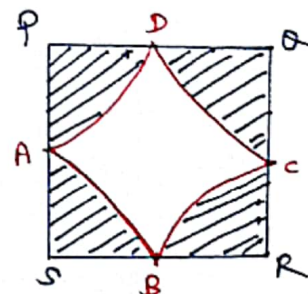


Q5. In this figure of circle with centre 'O' & AC is a diameter.
The area of shaded portion is given by →
(a) (Area of $\triangle ABC$ - Area of circle) (b) (Area of $\triangle ABC$ - Area of Semi circle)
(c) (Area of semi circle - Area of $\triangle ABC$) (d) None.



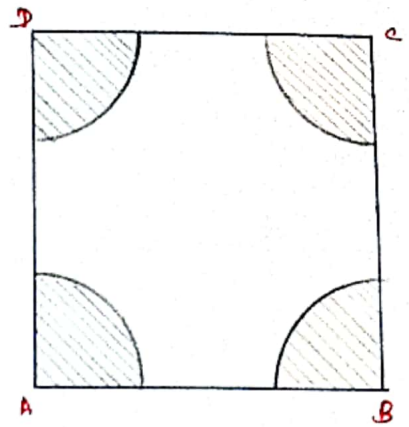
Q6. In the same above figure of Q5, if $AB=3\text{cm}$, $BC=4\text{cm}$. Then area of shaded portion is (a) 28.3cm^2 (b) 23.8cm^2 (c) 25.8cm^2 (d) None

Q7. If the side of square is 14cm, and D, C, A & B are the mid points of sides PQ, QR, RS & PS. Then area of unshaded region is → (a) 196cm^2 (b) 154cm^2 (c) 42cm^2
(d) None of these



In this figure of rectangle ABCD, 'm' is the mid point of DC. Then area of shaded portion is.
(a) 98cm^2 (b) 77cm^2 (c) 21cm^2 (d) None

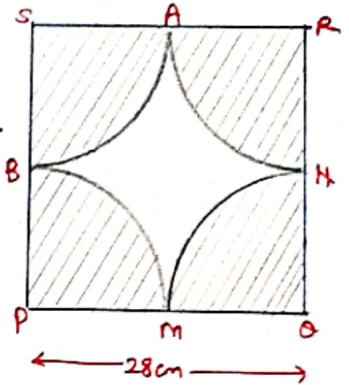
Q9. In this figure of square ABCD. 4 arcs have been drawn at the vertices of a square. Then area of shaded portion is given by \rightarrow



- (a) $2 \times \frac{\pi R^2 \theta}{360^\circ}$ (where $\theta = 90^\circ$) (c) πR^2
 (b) $4 \times \frac{\pi R^2 \theta}{360^\circ}$ (where $\theta = 90^\circ$) (d) Either (b) or (c)

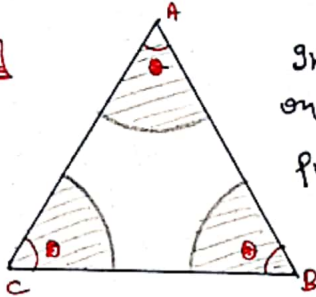
Q10. In the above figure of square ABCD given Radius of arc = 7cm. Then area of shaded portion is (a) 154 cm^2 (b) 145 cm^2 (c) 100 cm^2 (d) None

Q11. In this figure of square PQRS having side PQ = 28cm. Here M, N, A & B are midpoints of the respective sides. Then area of shaded portion is



- (a) 2464 cm^2 (b) 616 cm^2 (c) 2000 cm^2 (d) None

Q12



In this figure of ΔABC , 3 arcs are drawn on vertices of Δ having radius 4cm. Then area of shaded portion is \rightarrow (a) $\frac{176}{7} \text{ cm}^2$ (b) $\frac{167}{7} \text{ cm}^2$ (c) $\frac{88}{7} \text{ cm}^2$ (d) None

Q13

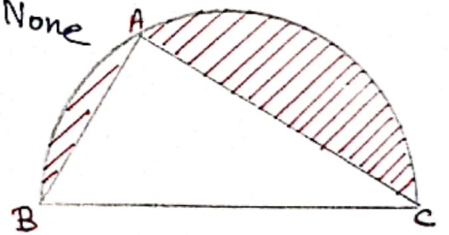
In the question No. 11. Find the perimeter of a shaded portion.

- (a) 22cm (b) 44cm (c) 88cm (d) None

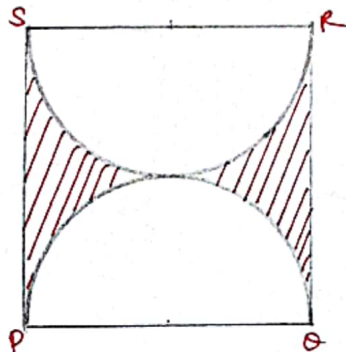
Q14

In this figure $AB = 12 \text{ cm}$, $AC = 16 \text{ cm}$, find the perimeter of shaded portion. (Take $\pi = 3.14$)

- (a) 59.4 cm (b) 95.4 cm (c) 59 cm (d) None



Q15



Find the area of shaded region (a) of the side of the square is 14cm.

- (a) 42 cm^2 (b) 24 cm^2 (c) Can't determine (d) None

Q16

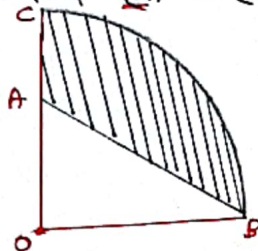
Find the perimeter of the same shaded portion.

- (a) 50cm (b) 44cm (c) 24cm (d) None

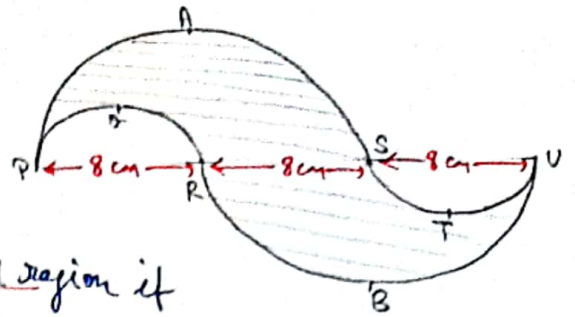
Q17

In this figure of Quadrant, given $OA = 4 \text{ cm}$, $CA = 8 \text{ cm}$. Find the area of shaded portion \rightarrow

- (a) 49 cm^2 (b) 98 cm^2 (c) 49.5 cm^2 (d) 24.5 cm^2



Q18. In this figure PQR, STU & PAS & RBV are semicircles. Perimeter of shaded portion is. —→ (a) 22π (b) 24π (c) π (d) None



Q19.



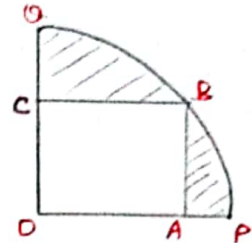
find the area of the shaded region if diameter of the circle is 14cm.

(a) 154cm^2 (b) 145cm^2 (c) 77cm^2 (d) None

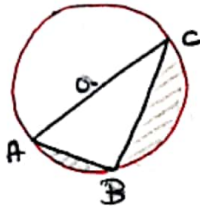
Q20.

find the area of shaded region if the side of the square is 10cm. ($\pi = 3.14$)

(a) 228cm^2 (b) 114cm^2 (c) 57cm^2 (d) None



Q21.



In this figure a circle with centre 'O'. find the area of shaded portion.

(a) $(\frac{1}{2} \times AB \times AC - \frac{1}{2} \pi R^2)$ (b) $(\pi R^2 - \frac{1}{2} \times AB \times BC)$
 (c) $(\frac{1}{2} \times AB \times BC - \frac{\pi R^2}{2})$ (d) $(\frac{\pi R^2}{2} - \frac{1}{2} \times AB \times BC)$

Q22.

ABCD is a square of side 14cm. E, F, G, H are the mid points of their respective sides. The area of shaded portion is —→ (a) 49cm^2 (b) 98cm^2 (c) 110cm^2 (d) None

