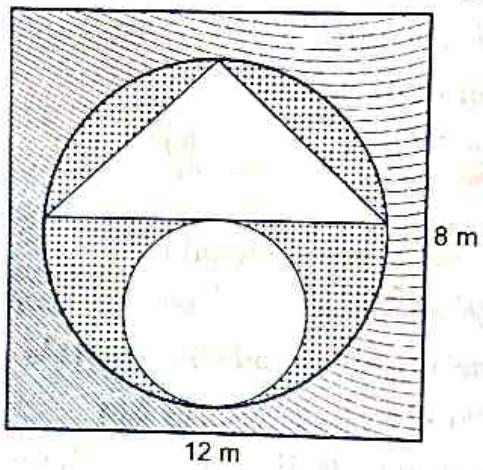
3. Read the following and answer any four questions from (*i*) to (*v*).

Gauri got her wall painted in a different manner. The whole wall was painted pink, leaving a circular portion of diameter 4.2m. In this circle, she asked the painter to paint a beautiful scenery in one half of it by drawing a full size triangle possible (as shown in the figure). In the other half of the circle, she drew the largest circle possible and pasted some of her pictures. The remaining part of the big circle was filled with dotted design.



(*i*) The area of the triangular region is

(*a*) 4.41 m^2 (*b*) 8.82 m^2 (*c*) 2.205 m^2 (*d*) 17.64 m^2

(*ii*) The radius of the circle allotted for her pictures is

(*a*) 4.2 m (*b*) 2.1 m (*c*) 1.05m (*d*) cannot be determined

(*iii*) The area of the wall that is not painted pink is given by

(*a*) $(96 - 4.41\pi)$ m^2 (*b*) $(40 - 4.41\pi)$ m^2 (*c*) $(96 - 17.64\pi)$ m^2 (*d*) $(40 - 17.641\pi)$ m^2

(iv) The area of the dotted design is approximately

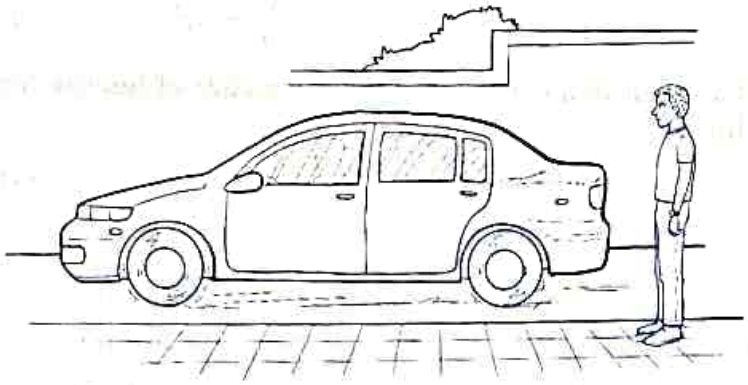
(a) 10 m^2 (b) 6 m^2 (c) 9 m^2 (d) 8 m^2

(v) The cost of designing the whole circular region at the rate of ₹ 80 per m^2 is

(a) ₹4,435.2 (b) ₹110.88 (c) ₹1,108.80 (d) ₹346.50

4. Read the following and answer any four questions from (i) to (v).

Raghav was standing outside his home. He then tried to find how many times does the wheel of the car move in a certain time.



(i) Raghav measured the diameter of his car's wheel and found it to be 84 cm. The distance travelled by the wheel in one revolution is

(a) 84π cm (b) 42π cm (c) 21π cm (d) 176π cm

(ii) He observed that an average speed of car in front of his house is 45 km/h. The distance travelled in 1 minute is

(a) 450 m (b) 750 m (c) 500 m (d) 760 m

(iii) The number of revolutions made by the wheel in eleven minutes is

(a) 31 (b) 32 (c) 18 (d) 25

(iv) If the circumference and the area of a circle are numerically equal, then diameter of the circle is

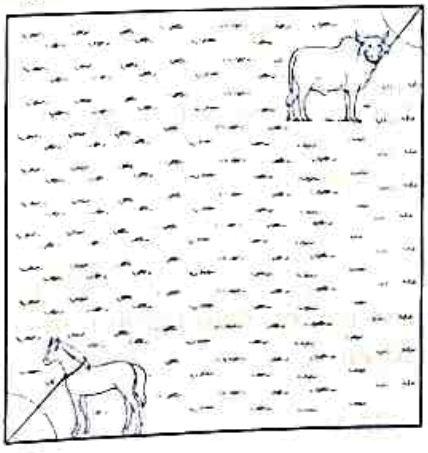
(a) 2 units (b) 4 units (c) 6 units (d) 1 unit

(v) The area of a circular ring formed by the circles of radii a and b respectively is given by

(a) $2\pi(a-b)$ (b) $2\pi(a^2-b^2)$ (c) $\pi(a^2-b^2)$ (d) $\pi(a^2+b^2)$

5. Read the following and answer any four questions from (i) to (v).

A horse and an ox are tied to a peg at opposite corners of a rectangular field of dimensions 35 m × 20 m by ropes of length 5 m and 10 m respectively. (use $\pi = 3.14$)



(i) The area of the field that the horse can graze is given by

(a) 25π m^2 (b) 10π m^2 (c) $\frac{25}{2}\pi$ m^2 (d) $\frac{25}{4}\pi$ m^2

(*ii*) **The area of the field the ox can graze is**

(*a*) 78.5 m^2 (*b*) 157 m^2 (*c*) 314 m^2 (*d*) 62.8 m^2

(*iii*) **The area of the field left to be grazed is**

(*a*) $700 - \frac{125\pi}{2}$ m^2 (*b*) $700 - \frac{125\pi}{4}$ m^2 (*c*) $110 - \frac{125\pi}{2}$ m^2 (*d*) $110 - \frac{125\pi}{4}$ m^2

(*iv*) **If the rope to which horse is tied would have been 8 m long, then the increase in the grazing area is given by**

(*a*) $\frac{39}{4}\pi$ m^2 (*b*) $\frac{35}{4}\pi$ m^2 (*c*) $\frac{37}{2}\pi$ m^2 (*d*) $\frac{35}{2}\pi$ m^2

(*v*) **The area of a sector of a circle bounded by an arc of length 5π cm is equal to 20π cm^2, then its radius is**

(*a*) 12 cm (*b*) 16 cm (*c*) 8 cm (*d*) 10 cm

swers

17. **The area of a quadrant of a circle whose circumference is 616 cm will be**

(*a*) 7546 cm^2 (*b*) 7500 cm^2 (*c*) 7456 cm^2 (*d*) 7564 cm^2

18. **The circumference of two circles are in the ratio 2 : 3. The ratio of their areas is**

(*a*) 2 : 3 (*b*) 4 : 9 (*c*) 9 : 4 (*d*) None of these

19. **If the perimeter of a semicircular protractor is 36 cm; its diameter is**

(*a*) 14 cm (*b*) 16 cm (*c*) 18 cm (*d*) 12 cm

20. **The area of a sector of a circle with radius 14 cm and central angle 45° is**

(*a*) 76 cm^2 (*b*) 77 cm^2 (*c*) 66 cm^2 (*d*) 55 cm^2

21. **If 0 is the angle (in degrees) of a sector of a circle of radius *r*, then area of the sector is**

(*a*) $\frac{\pi r^2 0}{360^\circ}$ (*b*) $\frac{\pi r^2 0}{180^\circ}$ (*c*) $\frac{2\pi r 0}{360^\circ}$ (*d*) $\frac{2\pi r 0}{180^\circ}$

22. **A wire can be bent in the form of a circle of radius 35 cm. If it is bent in the form of a square, then its area will be**

(*a*) 3025 cm^2 (*b*) $\frac{3025}{2}$ cm^2 (*c*) 1225 cm^2 (*d*) 2450 cm^2

23. **The difference between the circumference and radius of a circle is 37 cm. The area of circle is**

(*a*) 111 cm^2 (*b*) 184 cm^2 (*c*) 154 cm^2 (*d*) 259 cm^2

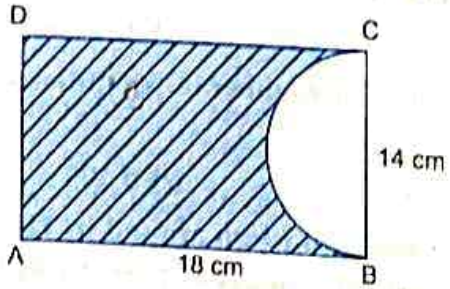
24. **On increasing the distance of circle by 40%, its area will be increased by**

(*a*) 40% (*b*) 80% (*c*) 96% (*d*) none of them

25. **The area of the square is same as the area of circle. Then their perimeter are in the ratio**

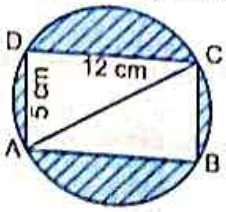
(*a*) 1 : 1 (*b*) $\sqrt{\pi}$: 2 (*c*) 2 : π (*d*) none of them

26. **A paper is in the form of a rectangle *ABCD* in which *AB* = 18 cm and *BC* = 14 cm. A semicircular portion with *BC* as diameter is cut off. The area of the remaining paper is**



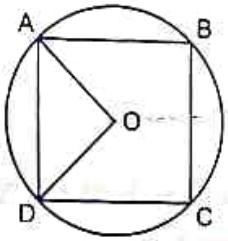
(*a*) 175 cm^2 (*b*) 165 cm^2 (*c*) 145 cm^2 (*d*) none of them

27. **The area of the shaded region in the given figure is (Take π = 3.14).**



(*a*) 75 cm^2 (*b*) 73 cm^2 (*c*) 70 cm^2 (*d*) none of them

28. A square $ABCD$ is inscribed in a circle of radius 'r'. The area of the square in square units is

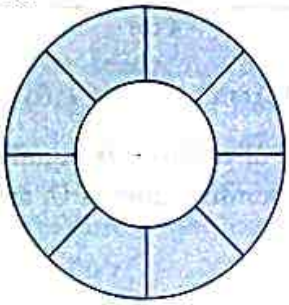


(a) $3r^2$ (b) $2r^2$ (c) $4r^2$ (d) none of them

29. The perimeter of a sector of a circle of radius 5.6 cm is 27.2 cm. The area of sector is

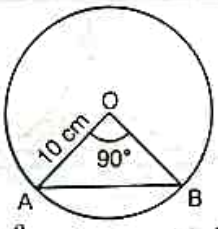
(a) 44 cm^2 (b) 44.6 cm^2 (c) 44.8 cm^2 (d) none of them

30. A racetrack is in the form of a ring whose inner circumferences is 352 m and outer circumference is 396 m. The width of the track is



(a) 4 m (b) 6 m (c) 8 m (d) 7 m

31. A chord AB of a circle of radius 10 cm makes a right angle at the centre of the circle. The area of major segment is



(a) 210 cm^2 (b) 285.7 cm^2 (c) 185.5 cm^2 (d) 258.1 cm^2

32. The ratio of outer and inner perimeters of circular path is 23:22. If the path is 5 m wide, the inner circle is

(a) 55 m (b) 110 m (c) 220 m (d) 230 m

33. The area of the incircle of an equilateral triangle of side 42 cm is

(a) $22\sqrt{3}$ cm^2 (b) 231 cm^2 (c) 462 cm^2 (d) 924 cm^2

34. The area of the largest triangle that can be inscribed in a semicircle is

(a) r^2 (b) $2r^2$ (c) r^3 (d) $2r^3$

35. If the circumference of a circle increases from 4π to 8π, then the area is

(a) halved (b) doubled (c) tripled (d) quadrupled

36. A horse is placed for grazing inside a rectangular field 70 m by 52 m is tethered to one corner by a rope 21 m long. The area it can graze is

(a) 340.5 cm^2 (b) 345 cm^2 (c) 346.5 cm^2 (d) none of them

37. A drain cover is made from a square metal of side 40 cm having 441 holes of diameter 1 cm each drilled in it. The area of remaining square plate is

(a) 1250.5 cm^2 (b) 1256.5 cm^2 (c) 1253.5 cm^2 (d) none of them