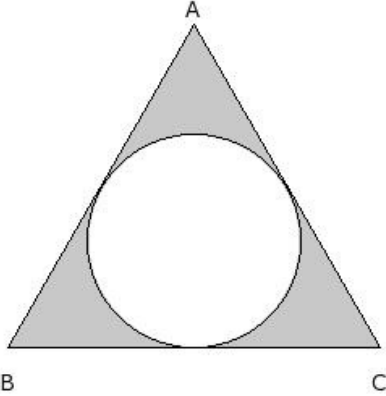


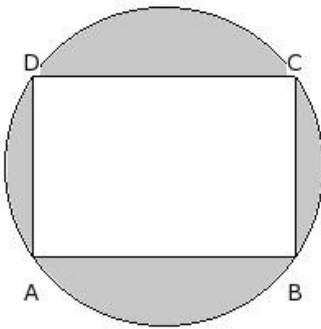


1. In the given figure, a circle is inscribed touching the sides of an equilateral triangle of side 23 cm. Find the area of the shaded region



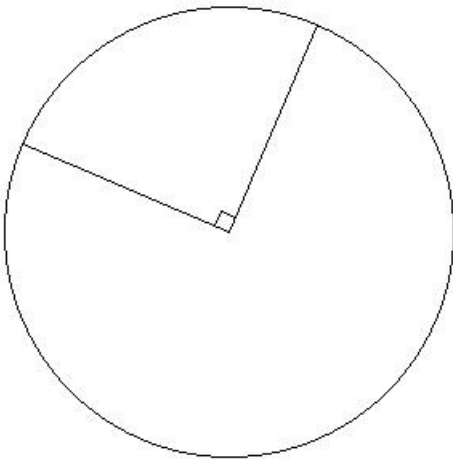
- (i) 95.52 sq.cm (ii) 93.52 sq.cm (iii) 90.52 sq.cm (iv) 85.52 sq.cm (v) 87.52 sq.cm

2. In the given figure, the circle circumscribes a rectangle with sides 16.00 cm and 11.00 cm. Find the area of the remaining portion other than the rectangle



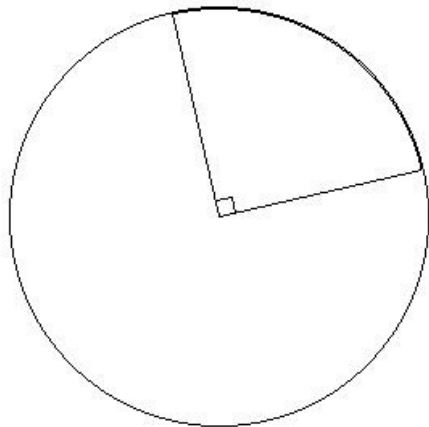
- (i) 114.21 sq.cm (ii) 120.21 sq.cm (iii) 128.21 sq.cm (iv) 95.21 sq.cm (v) 137.21 sq.cm

3. In the given figure, the radius of the circle is 14 cm. Find the area of the minor sector



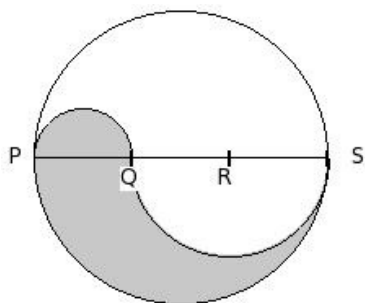
- (i) 154.00 sq.cm (ii) 139.00 sq.cm (iii) 167.00 sq.cm (iv) 170.00 sq.cm (v) 140.00 sq.cm

4. In the given figure, the radius of the circle is 13 cm. Find the area of the major sector



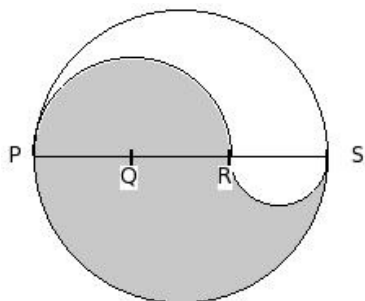
- (i) 398.36 sq.cm (ii) 381.36 sq.cm (iii) 414.36 sq.cm (iv) 396.36 sq.cm (v) 423.36 sq.cm

5. In the given figure, PQRS is the diameter of the circle of radius 13.50 cm and  $PQ = QR = RS$ . Find the area of the shaded region



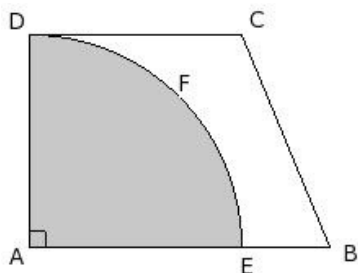
- (i) 173.93 sq.cm (ii) 206.93 sq.cm (iii) 190.93 sq.cm (iv) 175.93 sq.cm (v) 192.93 sq.cm

6. In the given figure, PQRS is the diameter of the circle of radius 10.50 cm and  $PQ = QR = RS$ . Find the perimeter of the shaded region



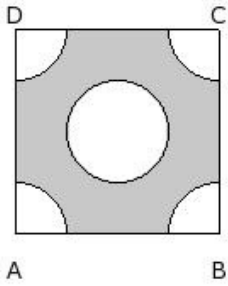
- (i) 71.00 cm (ii) 63.00 cm (iii) 66.00 cm (iv) 61.00 cm (v) 69.00 cm

7. In the given figure, ABCD is a trapezium. A quarter circle AEFD is removed from the trapezium. If  $AD = CD = 13$  and  $EB = 5.4$ , find the area of the remaining portion



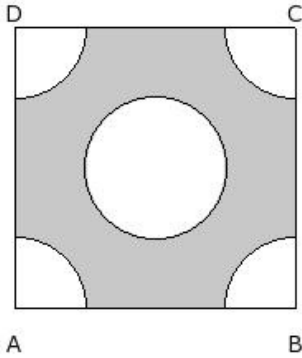
- (i) 74.31 sq.cm (ii) 66.31 sq.cm (iii) 76.31 sq.cm (iv) 71.31 sq.cm (v) 68.31 sq.cm

8. In the given figure, ABCD is a square of side 12.00 cm . At the centre there is a circle with radius 3.00 cm and the same circle quadrants are at the four corners. Find the area of the shaded region.



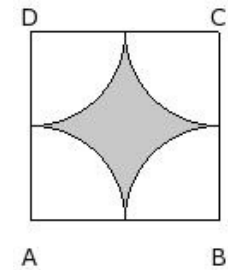
- (i) 84.43 sq.cm (ii) 90.43 sq.cm (iii) 92.43 sq.cm (iv) 87.43 sq.cm (v) 82.43 sq.cm

9. In the given figure, ABCD is a square of side 17.00 cm . At the centre there is a circle with radius 4.25 cm and the same circle quadrants are at the four corners. Find the perimeter of the shaded region.



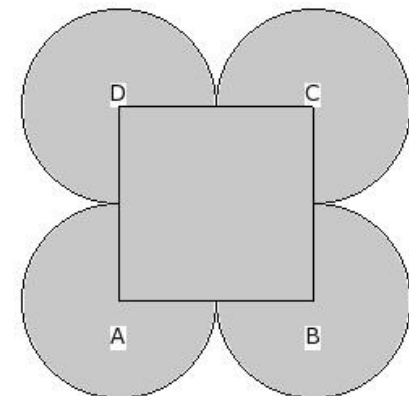
- (i) 90.43 cm (ii) 87.43 cm (iii) 92.43 cm (iv) 82.43 cm (v) 84.43 cm

10. In the given figure, ABCD is a square of side 11.00 cm and A, B, C, D are the centres of circular arcs, each of radius 5.50 cm. Find the area of the shaded region



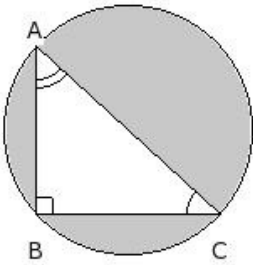
- (i) 25.93 sq.cm (ii) 30.93 sq.cm (iii) 20.93 sq.cm (iv) 22.93 sq.cm (v) 28.93 sq.cm

11. In the given figure, ABCD is a square of side 12.00 cm and A, B, C, D are centres of circles which touch externally in pairs. Find the area of the shaded region



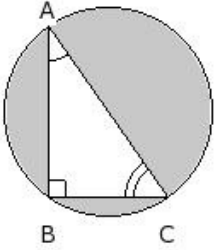
- (i) 483.43 sq.cm (ii) 500.43 sq.cm (iii) 470.43 sq.cm (iv) 465.43 sq.cm (v) 487.43 sq.cm

12. In the given figure,  $BC = 11$  cm and  $AB = 10$  cm. Find the area of the shaded region



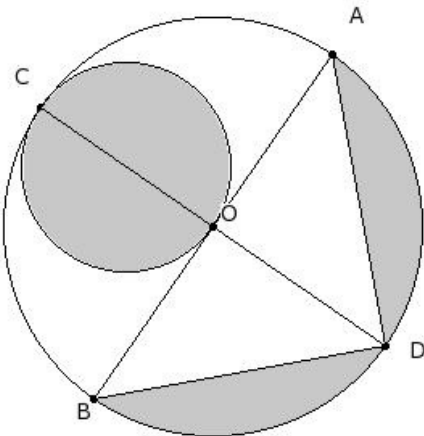
- (i) 90.64 sq.cm (ii) 118.64 sq.cm (iii) 124.64 sq.cm (iv) 115.64 sq.cm (v) 141.64 sq.cm

13. In the given figure,  $BC = 7$  cm and  $AB = 10$  cm. Find the perimeter of the shaded region



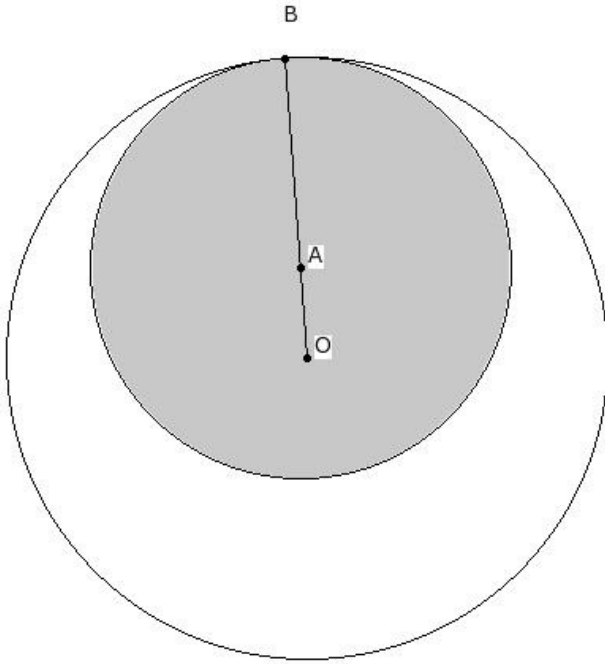
- (i) 67.57 cm (ii) 70.57 cm (iii) 62.57 cm (iv) 64.57 cm (v) 72.57 cm

14. In the below figure,  $AB$  is the diameter of a circle with center  $O$  and  $OA = 13.00$  cm. Find the area of the shaded region



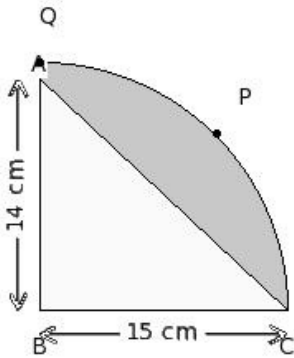
- (i) 203.36 sq.cm (ii) 236.36 sq.cm (iii) 245.36 sq.cm (iv) 229.36 sq.cm (v) 221.36 sq.cm

15. In the below figure, two circles with centers O and A touch internally at B. If  $OB = 19.00$  cm and  $OA = 5.7$  cm, find the area of the unshaded region



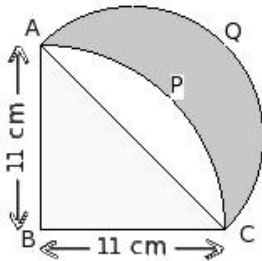
- (i) 584.63 sq.cm (ii) 565.63 sq.cm (iii) 576.63 sq.cm (iv) 596.63 sq.cm (v) 578.63 sq.cm

16. In the below figure, BCPQ is a quadrant of a circle.  $BC = 15.00$  cm and  $AB = 14$  cm. Find the area of the shaded region



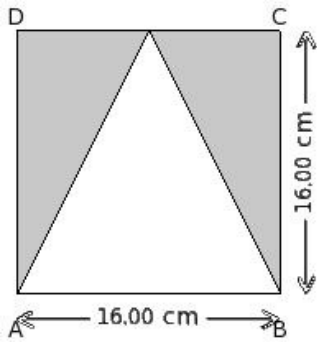
- (i) 66.78 sq.cm (ii) 68.78 sq.cm (iii) 71.78 sq.cm (iv) 76.78 sq.cm (v) 74.78 sq.cm

17. In the below figure, BCPA is a quadrant of a circle.  $BC = 11.00$  cm and CQA is a semicircle with CA as the diameter. Find the area of the shaded region



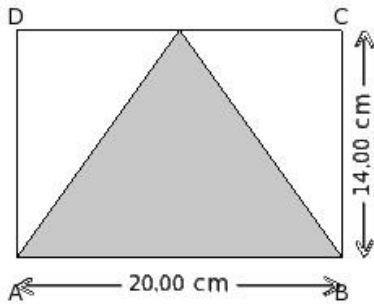
- (i) 63.50 sq.cm (ii) 65.50 sq.cm (iii) 60.50 sq.cm (iv) 55.50 sq.cm (v) 57.50 sq.cm

18. In the given figure, the triangle inside the square is an isosceles triangle. Find the area of the shaded region



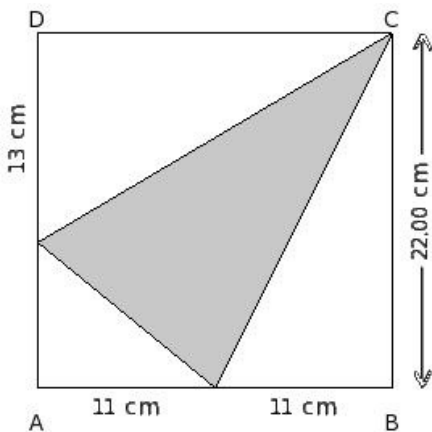
- (i) 155.00 sq.cm (ii) 112.00 sq.cm (iii) 128.00 sq.cm (iv) 136.00 sq.cm

19. In the given figure, find the area of the shaded region



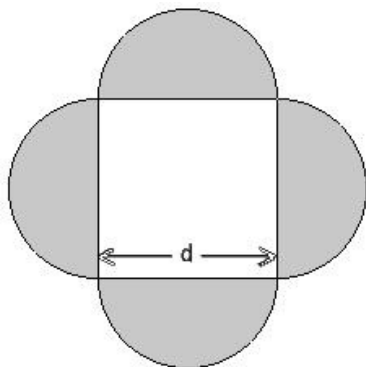
- (i) 152.00 sq.cm (ii) 113.00 sq.cm (iii) 147.00 sq.cm (iv) 125.00 sq.cm (v) 140.00 sq.cm

20. In the given figure, find the area of the shaded region



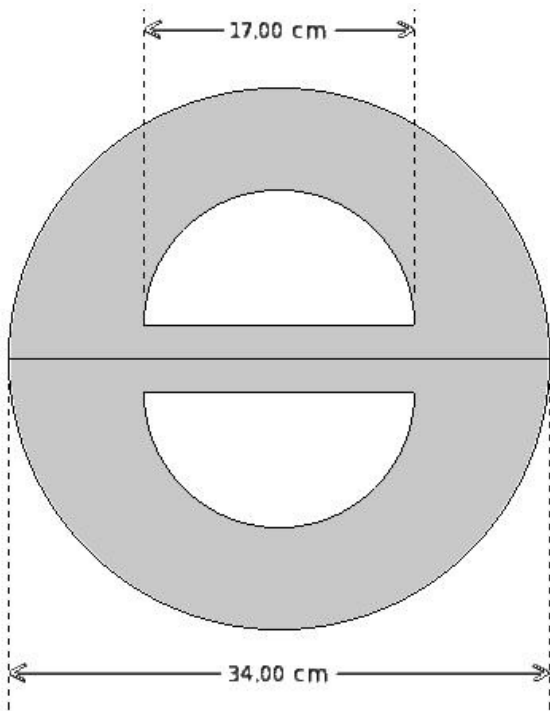
- (i) 194.50 sq.cm (ii) 174.50 sq.cm (iii) 157.50 sq.cm (iv) 170.50 sq.cm (v) 155.50 sq.cm

21. In the given figure,  $d = 11.00$  cm is the diameter of the semi-circles. Find the area of the shaded region



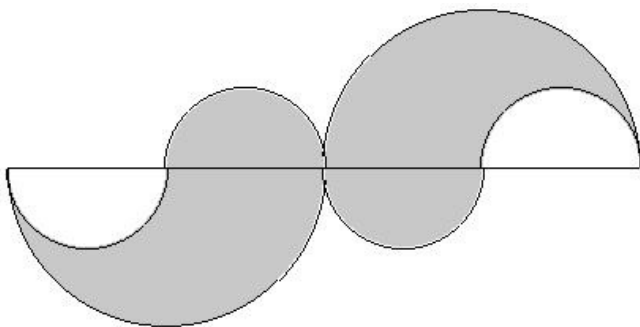
- (i) 217.14 sq.cm (ii) 186.14 sq.cm (iii) 205.14 sq.cm (iv) 167.14 sq.cm (v) 190.14 sq.cm

22. In the given figure, find the area of the shaded region



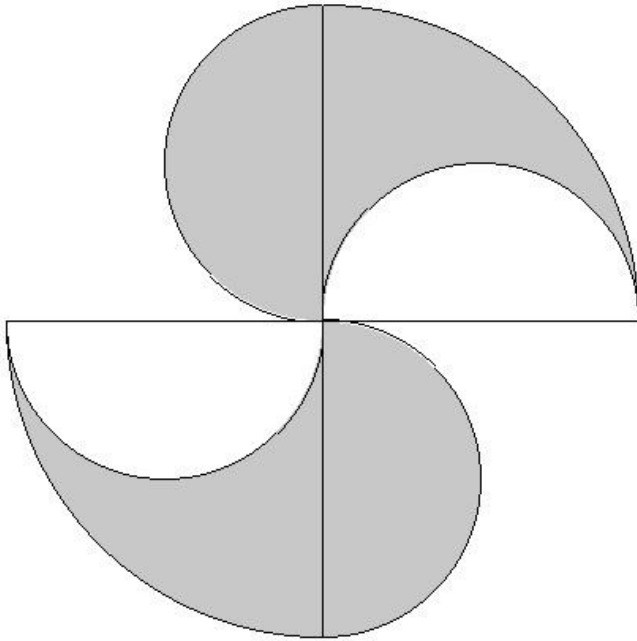
- (i) 683.21 sq.cm (ii) 668.21 sq.cm (iii) 675.21 sq.cm (iv) 695.21 sq.cm (v) 681.21 sq.cm

23. The given figure consists of four small semi-circles of equal radii and two big semi-circles of equal radii. The radius of each big semi-circle is 10.00 cm which is the same as the diameter of the small semi-circle. Find the area of the shaded region



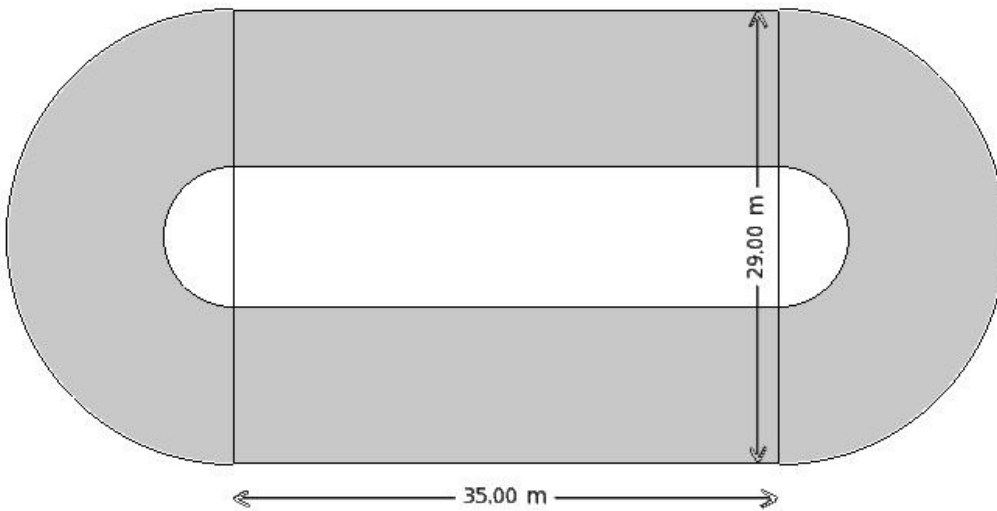
- (i) 291.29 sq.cm (ii) 330.29 sq.cm (iii) 296.29 sq.cm (iv) 326.29 sq.cm (v) 314.29 sq.cm

24. The given figure consists of two quarter circles each of radius 20.00 cm and four semi-circles each of radius 10.00 cm. Find the area of the shaded region



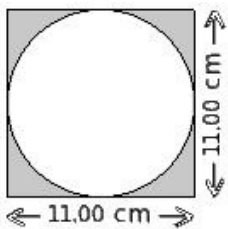
- (i) 605.57 sq.cm (ii) 622.57 sq.cm (iii) 628.57 sq.cm (iv) 655.57 sq.cm (v) 644.57 sq.cm

25. In the given figure, the width of the circular path is 10.00 m. Find the area of the shaded region



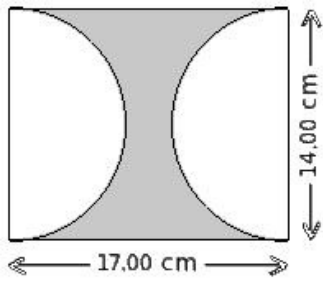
- (i) 1347.14 sq.m (ii) 1437.14 sq.m (iii) 1027.14 sq.m (iv) 1277.14 sq.m (v) 1297.14 sq.m

26. Find the area of the shaded region



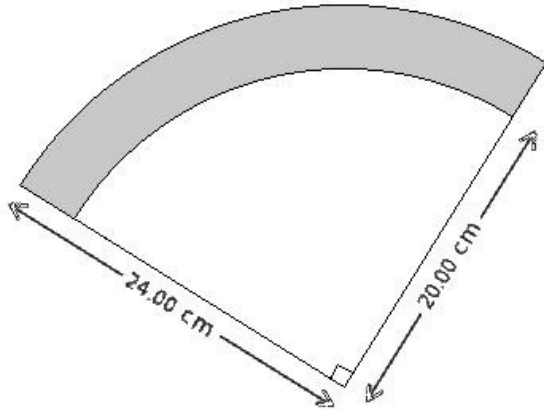
- (i) 28.93 sq.cm (ii) 20.93 sq.cm (iii) 22.93 sq.cm (iv) 30.93 sq.cm (v) 25.93 sq.cm

27. Find the area of the shaded region



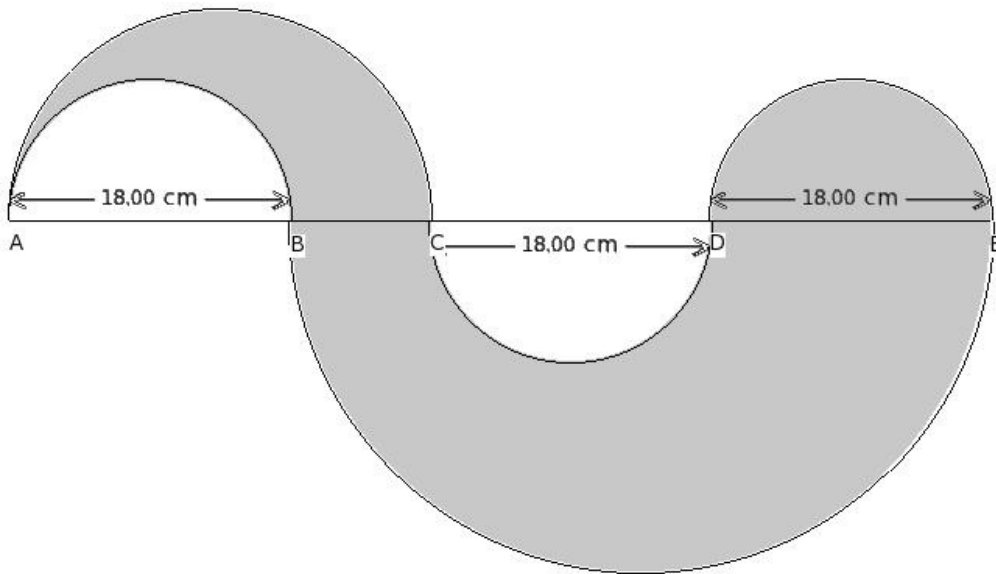
- (i) 81.00 sq.cm (ii) 89.00 sq.cm (iii) 87.00 sq.cm (iv) 79.00 sq.cm (v) 84.00 sq.cm

28. Find the area of the shaded region



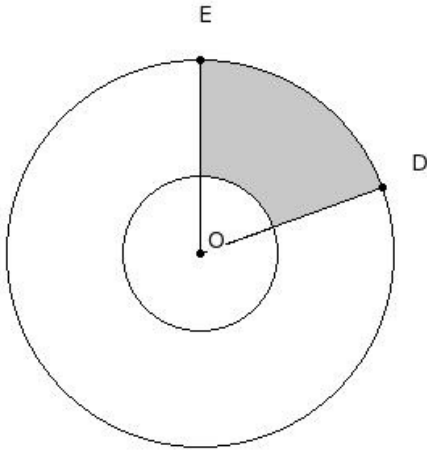
- (i) 132.29 sq.cm (ii) 123.29 sq.cm (iii) 138.29 sq.cm (iv) 156.29 sq.cm (v) 154.29 sq.cm

29. In the given figure,  $BC = 9.00$  cm. Find the area of the shaded region



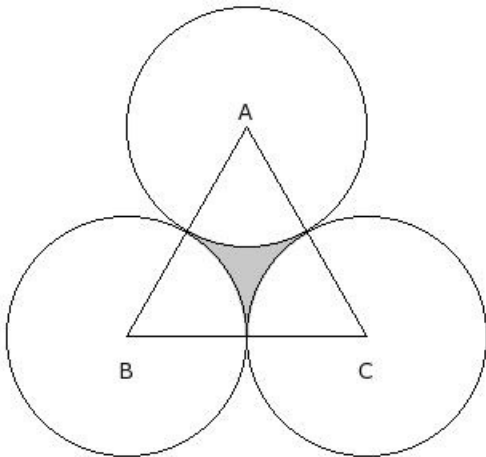
- (i) 954.64 sq.cm (ii) 971.64 sq.cm (iii) 976.64 sq.cm (iv) 939.64 sq.cm (v) 940.64 sq.cm

30. In the given figure, arcs of two concentric circles of radii 12.00 cm and 4.80 cm are drawn with center O. If  $\angle DOE = 70^\circ$ , find the area of the shaded region



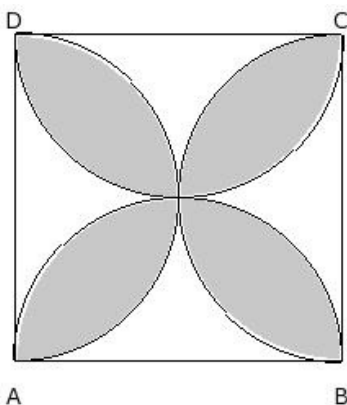
- (i) 76.92 sq.cm (ii) 68.92 sq.cm (iii) 70.92 sq.cm (iv) 73.92 sq.cm (v) 78.92 sq.cm

31. In the given figure  $\triangle ABC$  is an equilateral triangle whose area is 97.43 sq.cm. With each vertex of the triangle as center, a circle is drawn with radius equal to half the length of the side of the triangle. Find the area of the shaded region



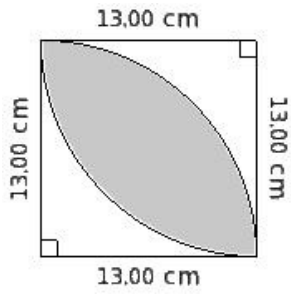
- (i) 7.04 sq.cm (ii) 8.04 sq.cm (iii) 10.04 sq.cm (iv) 9.04 sq.cm (v) 11.04 sq.cm

32. In the given figure, ABCD is a square with side 20.00 cm. Find the area of the shaded region



- (i) 244.57 sq.cm (ii) 214.57 sq.cm (iii) 251.57 sq.cm (iv) 228.57 sq.cm (v) 213.57 sq.cm

33. Find the area of the shaded region in the given figure common between the two quadrants of circles of radius 13.00 cm each



- (i) 99.57 sq.cm (ii) 93.57 sq.cm (iii) 96.57 sq.cm (iv) 91.57 sq.cm (v) 101.57 sq.cm

## Assignment Key

1) (iii)	2) (ii)	3) (i)	4) (i)	5) (iii)	6) (iii)
7) (iv)	8) (iv)	9) (ii)	10) (i)	11) (i)	12) (ii)
13) (i)	14) (iv)	15) (v)	16) (iii)	17) (iii)	18) (iii)
19) (v)	20) (iv)	21) (v)	22) (v)	23) (v)	24) (iii)
25) (v)	26) (v)	27) (v)	28) (iii)	29) (i)	30) (iv)
31) (iv)	32) (iv)	33) (iii)			