Practice Questions - Term 1

Date: 22/11/2021
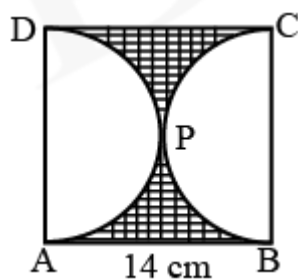
Subject: Mathematics

Topic : Areas Related to Circles   Class: X

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1. If the circumference of a circle exceeds its diameter by 180 cm, then find its radius in cm.

    A. 32

    B. 36

    C. 40

    D. 42

2. Find the area of the shaded region in the figure given below, if ABCD is a square of side 14 cm and APD and BPC are semicircles.
    (Take $\pi = \frac{22}{7}$)

    A. 45 cm^2
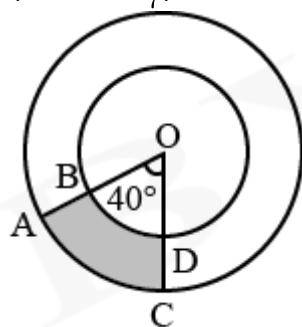
    B. 42 cm^2

    C. 60 cm^2

    D. 35 cm^2

3.

An arc of a circle is of length 5π cm and the sector it bounds has an area of 20π cm^2 . The radius of the circle is _____(in cm).

    A. 12

    B. 5

    C. 8

    D. 10

4.

Find the area of the shaded region (in cm^2) as shown in figure of the two concentric circles with centre O and radius 7 cm and 14 cm respectively. Given ∠AOC = $40°$.
(use $\pi = \frac{22}{7}$)

    A. 42.1 cm^2

    B. 51.32 cm^2

   **C.** 67.8 cm^2

    D. 96.5 cm^2

5.

A paper is in the form of a rectangle ABCD where AB = 22 cm and BC = 14 cm. A semicircle portion with BC as diameter is cut off. Find the area of the remaining paper in cm^2.

    A. 221

    B. 210

    C. 231

    D. 240

6.

Radius of the outer circle is 18 cm and the radius of the inner circle is 7 cm. What is the area of the region between the outer and the inner circles?

    A. 275 πcm^2

    B. 361 πcm^2

    C. 133 cm^2

    D. 192.5 cm^2

7.

Calculate the area of the shaded region in the figure given in cm^2.
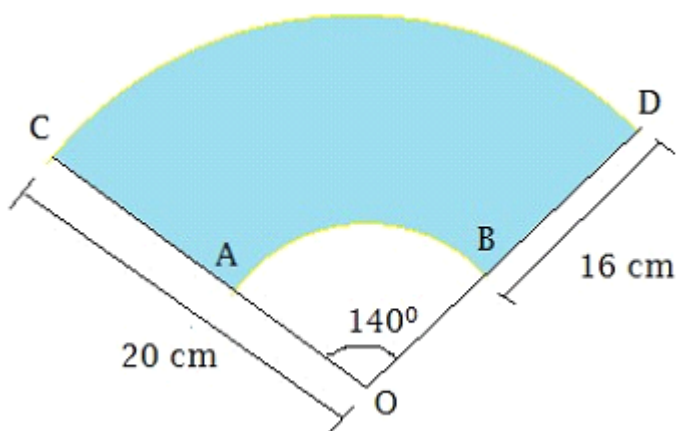
A. 469.3

B. 281.2

C. 1120.4

D. 2499.7

8.

The Yin-Yang symbol can be explained by the following dimensions. What would be the area covered by the Yin (black) region if the radius of the larger circle is, R = 8 cm?
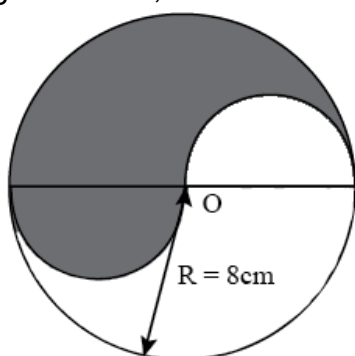
A. 97.75 cm^2

B. 94.54cm^2

C. 98.12 cm^2

D. 100.57 cm^2

9. Find the area of the shaded region where ABC is a quadrant of radius 5 cm and a semicircle is drawn with BC as diameter.
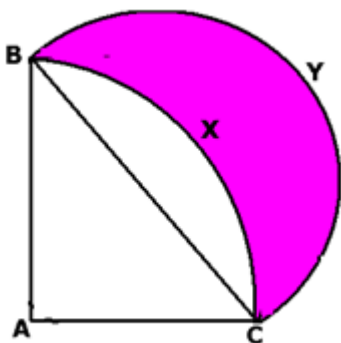
    A.   19.64 cm^2

    B.   12.5 cm^2

    C.   7.14 cm^2

    D.   8.8 cm^2

10. In a cycle race, a boy was cycling in such a way that the wheels are making 200 revolutions per minute. Diameter of the wheel is 50cm, what is the cycling speed per hr?

    A.   14.7 km/hr

    B.   17 km/hr

   **C.**   18.84 km/hr

    D.   20 km/hr

11. What will be the circumference of a circle having area 9 times the area of a circle with diameter 8 cm?

   A. 88 cm

   B. 70 cm

   C. 72.51 cm

   D. 75.36 cm

12. A drain cover is made from a square metal plate of side 40 cm and has 336 holes of radius 1 cm each drilled in it. Find the area in cm^2 of the remaining square plate.
   (Take $\pi = \frac{22}{7}$)

   A. $253 \ cm^2$

   B. $544 \ cm^2$

   C. $636 \ cm^2$

   D. $564 \ cm^2$

13. The given figure is a sector of a circle of radius 20 cm. Find the perimeter of the sector.
(Take π = 3.14)
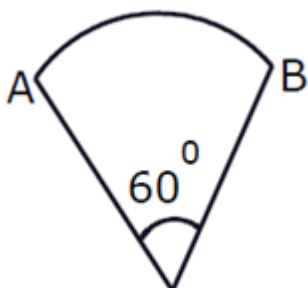

   A. 55.25 cm

   B. 60.93 cm

   C. 65.48 cm

   D. 70.17 cm

14. A car travels 0.99 km distance in which each wheel makes 450 complete revolutions. Find the radius of its wheel in m.

   A. 0.45

   B. 0.35

   C. 0.55

   D. 0.65

15. A circle has radius 5 cm. A section of its circumference has length π cm. What is the angle subtended by this section at the centre?

   A. $36°$

   B. $45°$

   C. $50°$

   D. $60°$

16. A pendulum swings through an angle of $30°$ and describes an arc 8.8 cm in length. Find the length of pendulum in cm.

    A. 14.5

    B. 15.1

    C. 17.3

    D. 16.8

17. If the perimeter of a circle is equal to that of a square, then the ratio of area of circle to the square is _____.

    A. 22 : 07

    B. 14 : 11

    C. 7 : 22

    D. 11 : 14

18. A circle having radius 4 cm contains a chord of length 4 cm and subtends an angle of 60 degrees. Find the area of the minor segment of the chord.

    A. $2cm^2$

    B. $1.5\ cm^2$

    C. $3\ cm^2$

    D. $0.5\ cm^2$

19.
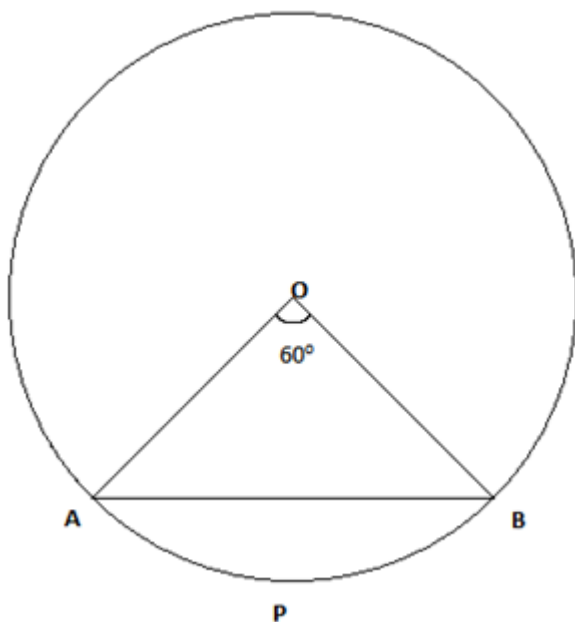
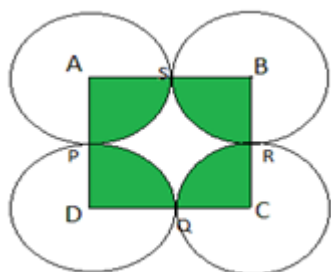The radius of the circle given above is 7cm and the angle subtended by the arc is $60°$.

If the area of ΔOAB is $21cm^2$, then find the area of segment APBA. $\left(\pi = \frac{22}{7}\right)$

- **A.** $5.8\ cm^2$

- **B.** $4.7\ cm^2$

- **C.** $8\ cm^2$

- **D.** $1\ cm^2$

20. Given below is a combination figure of square ABCD of side 26cm and four circles. Find the area of the shaded region.

- **A.** 530.64 cm^2

- **B.** 402.83 cm^2

- **C.** 360 cm^2

- **D.** 480.53 cm^2