Class 10 Mathematics · Chapter 11: Areas Related to Circles

Worksheet · 20 marks · about 40 minutes · based on NCERT

Name _____ Class and section _____ Date _____

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1. Two radii of a circle make an angle of 120° at the centre. The angle of the major sector they form is [1]

(a) 60° (b) 240°
(c) 180° (d) 300°

2. OA and OB are radii of a circle of radius 12 cm with ∠AOB = 90°. The area of triangle OAB is [1]

(a) 72 cm^2 (b) 144 cm^2
(c) $36\sqrt{3}$ cm^2 (d) 36 cm^2

3. OA and OB are radii of a circle of radius 10 cm with ∠AOB = 60°. The area of triangle OAB is [1]

(a) 50 cm^2 (b) 100 cm^2
(c) $50\sqrt{3}$ cm^2 (d) $25\sqrt{3}$ cm^2

4. Two radii of a circle of radius 28 cm are perpendicular. The area of the major sector they form is. Take π = 22/7. [1]

(a) 616 cm^2 (b) 1232 cm^2
(c) 2464 cm^2 (d) 1848 cm^2

5. The angle of a sector is kept the same and its radius is doubled. Then [1]

(a) its arc length and its area both double (b) its arc length doubles and its area becomes four times
(c) its arc length becomes four times and its area doubles (d) its arc length and its area both become four times

6. Two radii at 60° to each other divide a circular rangoli of radius 42 cm into a minor and a major sector. Find the area of the major sector. Take π = 22/7. [2]

7. A round roti with centre O and radius 21 cm is cut in two along a straight line AB, where ∠AOB = 90°. Find the area of the smaller piece. Take π = 22/7. [2]

8. A wedge of cheese has a top face in the shape of a sector of radius 28 mm and angle 90°. Find the length of the curved edge and the area of the top face. Take π = 22/7. [2]

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9. A chord of a circle of radius 12 cm is equal to the radius. Find the area of the minor segment it cuts off. (Take $\pi = 3.14$ and $\sqrt{3} = 1.73$.) [3]

10. A lawn sprinkler stands at an outer corner of a building, so the building blocks a 90° part of its turn and it sprays through the rest of the full circle. Its spray reaches 14 m. Find the area watered and the length of the outer edge of the watered region. Take $\pi = 22/7$. [3]

11. A circular metal plate of radius 14 cm has two circular holes, each of radius 3.5 cm, punched in it, as in the figure. Find the area of metal left. Take $\pi = 22/7$. [3]

