MATHS

BOOKS - MBD NCERT SOLUTIONS

AREAS OF PLANE FIGURES

Multiple Choice Questions

1. The area of a sector of angle θ° of a circle with radius R is

A. $\dfrac{\theta}{180} \times 2\pi R$

B. $\dfrac{\theta}{180} \times \pi R^2$

C. $\dfrac{\theta}{360} \times 2\pi R$

D. $\dfrac{\theta}{360} \times \pi R^2$

Answer: D

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2. The length of an arc of a sector of angle $\theta°$ of a circle with radius R is

A. $\dfrac{\theta}{360} \times \pi r^2$

B. $\dfrac{\theta}{360} \times 2\pi r$

C. $\dfrac{\theta}{180} \times 2\pi r$

D. None of these

Answer: B

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3. Area of major sector of angle $\theta°$ of a circle with radius R will be :

A. $\dfrac{\theta}{360} \times \pi R^2$

B. $\dfrac{\theta}{180} \times \pi R^2$

C. $\left(\dfrac{360 - \theta}{360}\right) \times \pi R^2$

D. None of these

Answer: A

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4. The area of a sector of angle θ° of a circle with radius R is

A. $\dfrac{P}{180} \times 2\pi r$

B. $\dfrac{P}{180} \times \pi r^2$

C. $\dfrac{P}{360} \times 2\pi r$

D. $\dfrac{P}{720} \times 2\pi r^2$

Answer: D

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5. The ratio of circumference and diameter of a circle is :

A. $2\pi : 1$

B. $\pi : 1$

C. $1 : 1$

D. None of these

Answer: B

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6. The ratio of circumference and radius of a circle is :

A. $2\pi : 1$

B. $\pi : 1$

C. $1 : 1$

D. None of these

Answer: A

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7. The ratio of radius and circumference of a circle is :

A. $\pi : 1$

B. $1 : \pi$

C. $1 : 2\pi$

D. $2\pi : 1$

Answer: C

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8. Relation between diameter and circumference

A. $2\pi : 1$

B. $1 : 2\pi$

C. $1 : \pi$

D. $\pi : 1$

Answer: C

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9. The radii of two circles are 12 cm and 5 cm respectively . The radius of the circle, which

has circumference equal to the sum of the circumferences of the two circles, is :

A. 189 cm

B. 7 cm

C. 17 cm

D. 119 cm

Answer: C

10. Find the area of a sector of a circle with radius 6 cm if angle of the sector is $60o$

A. $25cm^2$

B. $\dfrac{25}{6}\pi cm^2$

C. $\dfrac{30}{7}\pi cm^2$

D. None of these

Answer: B

11. The volume of a cube is $729cm^3$, then the length of its edge is _____.

    A. 11m

    B. $11m^2$

    C. $9m^2$

    D. 9m

Answer: D

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12. The curved surface area of a cylinder with radius 2cm and height 7 cm will be :

A. $88cm^2$

B. 88 cm

C. $88cm^3$

D. 44 cm

Answer: A

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13. The circumference of a circle is 44 cm. Its area is

    A. 14 cm

    B. 7 cm

    C. 49 cm

    D. 28 cm

Answer: B

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14. Find the area of the sector of a circle having radius 6 cm and of angle $30°$. [Take $\pi = 3.14$]

A. $\dfrac{132}{7}cm^2$

B. $\dfrac{132}{7}cm^3$

C. $\dfrac{132}{7}cm$

D. $\dfrac{44}{7}cm^2$

Answer: A

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15. Find the area of a circle of radius 7 cm.

    A. 154 cm

    B. $154cm^2$

    C. $44cm^2$

    D. 44 cm

Answer: B

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16. In a circle of radius r cm, an arc subtends an angle of $60°$ at the centre. The length of the arc will be :

A. $\dfrac{\pi r}{3} cm$

B. $\dfrac{2\pi r}{3} cm^2$

C. $\dfrac{\pi r^2}{3} cm^2$

D. $\dfrac{\pi r}{3} cm^2$

Answer: A

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17. Find the circumference of a circle of radius

14 cm.

    A. 44cm

    B. $44cm^2$

    C. 88 cm

    D. $88cm^2$

Answer: C

18. The radius of the circle is 14cm and the area of its sector will be if the angle of sector be $60°$:

A. $\dfrac{308}{3} cm^3$

B. $\dfrac{308}{3} cm$

C. $\dfrac{308}{3} cm^2$

D. $\dfrac{22}{3} cm^2$

Answer: C

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19. Find the area of a quadrant of a circle whose circumference is 22cm.

A. $194 cm^2$

B. $\dfrac{121}{7} cm^2$

C. $\dfrac{77}{8} cm^2$

D. $\dfrac{154}{7} cm^2$

Answer: C

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20. Area of the sector of a circle with radius 4 cm and of angle $30°$ is :

    A. $4.19 cm^2$

    B. $3.78 cm^2$

    C. $5.25 cm^2$

    D. None of these

Answer: A

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21. The radii of two circles are 12 cm and 7 cm respectively. The radius of the circle which has circumference equal to the sum of the circumference of the two circles is :

A. 5 cm

B. 9.2 cm

C. 19cm

D. 17 cm

Answer: C

22. Find the area of the sector of a circle having radius 6 cm and of angle $30°$. [Take $\pi = 3.14$]

A. $\dfrac{152}{7} cm^2$

B. $144 cm^2$

C. $66 cm^2$

D. $\dfrac{132}{7} cm^2$

Answer: D

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23. If diameter of a circle is r cm, then the area of a circle is :

A. $\pi r^2 cm^2$

B. $\dfrac{\pi r^2}{4} cm^2$

C. $\dfrac{\pi r^2}{2} cm^2$

D. $2\pi r cm^2$

Answer: B

24. If diameter of a circle is 2r cm, then area of the circle is :

A. $\pi r^2 cm^2$

B. $4\pi r^2 cm^2$

C. $\dfrac{\pi r^2}{2} cm^2$

D. $2\pi r cm^2$

Answer: A

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25. If diameter of a circle is $\frac{r}{2} cm$, Then the area of a circle is :

A. $\pi r^2 cm^2$

B. $\frac{\pi r^2}{16} cm^2$

C. $\frac{\pi r^2}{4} cm^2$

D. $\pi r cm^2$

Answer: B

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26. If the peremeter and the area of a circle are numercally equal, then the radius of the circle is:

A. 2 units

B. π units

C. 4 units

D. 7 units

Answer: A

27. If the perimeter of a circle is equal to that of a square, then the ratio of their areas is

    A. $11 : 14$

    B. $7 : 22$

    C. $14 : 11$

    D. $22 : 7$

Answer: C

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1. Find the area of sector of a circle with radius 6cm, if angle of the sector is 60°

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2. Find the area of a sector of a circle with radius 4 cm and of angle 30°. $(\pi = 3.14)$

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3. In a circle of radius 21 cm, an arc subtends an angle of $60°$ at the centre. Find the length of the arc.

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Short Answer Type Questions

1. Find the circumference of a circle whose area is $6.16 cm^2$

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2. The cost of fencing a circular field at the rate of Rs 25 per meter is Rs 5,275 . Find the diameter of the field.

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3. Find the cost of ploughing the circular field having diameter 10 meter and rate of ploughing is Rs 1.50 per square meter.

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4. Cost of ploughing at the rate of Rs 10 per m^2 is Rs 1540. Find the radius of circular field. $\left(\pi = \dfrac{22}{7} \right)$

5. Find the area of the sector of a circle with radius 4 cm and the angle at the centre is $45°$ $(\pi = 3.14)$

6. Find the area of the sector of a circle with radius 7 cm and the angle at the centre is $30°$.

7. In a circle of radius 21cm, an arc subtends an angle of 60^0 at the centre. Find (i) the length of the arc (ii) area of the sector formed by the arc. $\left(Use \pi \dfrac{22}{7} \right)$

8. Find the area of a sector of a circle with radius 6 cm if angle of the sector is $60o$

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9. Find the area of the shaded region as shown in figure, where ABCD is square of side 14 cm.

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10. The length of the minute hand of a clock is 14 cm. Find the area swept by the minute hand in 5 minutes.

11. The area of an equilateral triangle ABC is $17320.5 \ cm^2$. With each vertex of the triangle as centre, a circle is drawn with radius equal to half the length of the side of the triangle (see

Fig. 12.28). Find the area of the shaded region.

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12. A horse is tied to a peg at one corner of a square shaped grass field of side 15 m by means of a 5 m long rope. Find (i) the area of that part of the field in which the horse can graze. (ii) the increase in the grazing area if the rope were 10 m

13. Find the area of the sector of a circle with radius 4 cm and of angle $30o$. Also, find the area of the corresponding major sector

14. The cost of fencing a circular field at the rate of Rs 12 meter is Rs 2640. The field is to be ploughed at the rate of Rs 0.50 per m^2. Find the cost of ploughing the field ($\pi = \dfrac{22}{7}$)