

Question 1.

The circumference of a circle exceeds its diameter by 120cm, then its radius is

- (a) 56cm
- (b) 14cm
- (c) 42cm
- (d) 28cm

Answer: (d) 28cm

Question 2.

The area of a circle is 2464 sq. cm, then its diameter is given by

- (a) 7cm
- (b) 14cm
- (c) 28cm
- (d) 56cm

Answer: (d) 56cm

Question 3.

The diameter of a wheel is 1.26 m. The distance travelled in 500 revolutions is

- (a) 2670 m
- (b) 2880 m
- (c) 1980 m
- (d) 1596 m

Answer: (c) 1980 m

Question 4.

The area of a sector of a circle with radius 21cm and sector angle  $120^\circ$  is

- (a) 462 sq. cm
- (b) 288 sq. cm
- (c) 156 sq. cm
- (d) 426 sq. cm

Answer: (a) 462 sq. cm

Question 5.

The perimeter of a circle is equal to that of a square, then the ratio of their areas is

- (a) 22 : 7
- (b) 14 : 11
- (c) 1 : 22
- (d) 11 : 14

Answer: (b) 14 : 11

Question 6.

The ratio of the areas of the incircle and circumcircle of a square is

- (a) 1 : 2
- (b) 1 : 3
- (c) 1 : 4
- (d) 1 :  $\sqrt{2}$

Answer: (a) 1 : 2

Question 7.

If the area of a circle is numerically equal to twice its circumference, then the diameter of the circle is:

- (a) 4 units
- (b) n units
- (c) 8 units
- (d) 2 units

Answer: (c) 8 units

Question 8.

The ratio of area of two circles whose ratio of circumference is 3:1 will be

- (a) 3 : 1
- (b) 1 : 3
- (c) 1 : 9
- (d) 9 : 1

Question 9.

If the area of a circle is  $154 \text{ cm}^2$ , then its perimeter is

- (a) 11cm
- (b) 22 cm
- (c) 44 cm
- (d) 55 cm

Answer: (c) 44 cm

Question 10.

The area of a sector of a circle bounded by an arc of length  $5\pi \text{ cm}$  is equal to  $20\pi \text{ cm}^2$ , then its radius is

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

Answer: (c) 8 cm

Question 11.

The area of a circle whose circumference is 22 cm, is

- (a)  $\pi \text{ cm}^2$
- (b)  $38.5 \text{ cm}^2$
- (c)  $22 \text{ cm}^2$
- (d)  $77 \text{ cm}^2$

Answer: (b)  $38.5 \text{ cm}^2$

Question 12.

If the radius of a circle is increased by 100%, then its area is increased by

- (a) 100%
- (b) 300%
- (c) 200%
- (d) 400%

Answer: (b) 300%

Question 13.

The perimeter of a semicircular protractor whose radius is 7cm is

- (a) 18cm
- (b) 27cm
- (c) 36cm
- (d) 72cm

Answer: (c) 36cm

Question 14.

If 'r' is the radius of a circle, then its perimeter is given by

- (a)  $\pi r$
- (b)  $2\pi r$
- (c)  $2\pi d$
- (d) none of these

Answer: (b)  $2\pi r$

Question 15.

The area of the circle that can be inscribed in a square of side 10cm is

- (a) 25 sq.cm
- (b)  $10\pi$  sq.cm
- (c)  $125\pi$  sq.cm
- (d)  $20\pi$  sq.cm

Answer: (c)  $125\pi$  sq.cm

Question 16.

It is proposed to build a single circular park equal in area to the sum of areas of two circular parks of diameters 16 m and 12 m in a locality. The radius of the new park would be

- (a) 10 m
- (b) 15 m
- (c) 20 m
- (d) 24 m

Answer: (a) 10 m

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Question 17.

The distance covered by a circular wheel of diameter 'd' in 100 revolutions is

- (a)  $100\pi$
- (b)  $100d$
- (c)  $\pi d$
- (d)  $100\pi d$

Answer: (d)  $100\pi d$

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Question 18.

The diameter of a wheel is 1.26 m. The distance travelled in 500 revolutions is

- (a) 2670 m
- (b) 2880 m
- (c) 1980 m
- (d) 1596 m

Answer: (c) 1980 m

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Question 19.

The area of the square that can be inscribed in a circle of radius 12 cm is

- (a) 288 sq. cm
- (b) 576 sq. cm
- (c) 144 sq. cm
- (d) 500 sq. cm

Answer: (a) 288 sq. cm

Question 20.

The perimeter (in cm) of a square circumscribing a circle of radius a cm, is

- (a)  $8a$

- (b) 4 a
- (c) 2 a
- (d) 16

Answer: (a) 8 a

Question 21.

The radii of two circles are 4 cm and 3 cm respectively. The diameter of the circle having area equal to the sum of the areas of the two circles (in cm) is:

- (a) 5
- (b) 7
- (c) 10
- (d) 14

Answer: (c) 10

Question 22.

The radii of two circles are 19 cm and 9 cm respectively. The radius of the circle which has circumference equal to the sum of the circumference of two circles is

- (a) 35 cm
- (b) 10 cm
- (c) 21 cm
- (d) 28 cm

Answer: (d) 28 cm

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1. The area of the circle is  $154 \text{ cm}^2$ . The radius of the circle is

- (a) 7 cm
- (b) 14 cm
- (c) 3.5 cm
- d) 17.5 cm

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2. If angle of sector is  $60^\circ$ , radius is 3.5 cm then length of the arc is

- (a) 3 cm
  - (b) 3.5 cm
  - (c) 3.66 cm
  - (d) 3.8 cm
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Areas Related To Circles MCQs Question 3. The area of a quadrant of a circle whose circumference is 22 cm, is

- (a)  $\frac{11}{8} \text{ cm}^2$  (b)  $\frac{77}{2} \text{ cm}^2$  (c)  $\frac{77}{4} \text{ cm}^2$  (d)  $\frac{77}{8} \text{ cm}^2$
- 

4. If  $\theta$  is the angle in degrees of a sector of a circle of radius  $r$ , then area of the sector is

- (a)  $\frac{\pi r^2 \theta}{180}$  (b)  $\frac{\pi r^2 \theta}{360}$  (c)  $\frac{2\pi r \theta}{180}$  (d)  $\frac{2\pi r \theta}{360}$
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5. A horse is tied to a peg at one corner of a square shaped grass field of side 15 m by means of a 7 m long rope. The area of that part of the field in which the horse can graze, is

- (a)  $77 \text{ cm}^2$   
(b)  $772 \text{ cm}^2$   
(c)  $154 \text{ cm}^2$   
(d)  $774 \text{ cm}^2$
- 

6. The area of the circle whose diameter is 21 cm is

- (a)  $346.5 \text{ cm}^2$   
(b)  $37.68 \text{ cm}^2$   
(c)  $18.84 \text{ cm}^2$   
(d)  $19.84 \text{ cm}^2$
- 

7. The area of the sector of a circle with radius 6 cm and of angle  $60^\circ$  is

- (a)  $9.42 \text{ cm}^2$   
(b)  $37.68 \text{ cm}^2$   
(c)  $18.84 \text{ cm}^2$   
(d)  $19.84 \text{ cm}^2$
- 

8. The area of a circle whose circumference is 22 cm, is

- (a)  $11 \text{ cm}^2$   
(b)  $38.5 \text{ cm}^2$   
(c)  $22 \text{ cm}^2$   
(d)  $77 \text{ cm}^2$
- 

9. The area of a circle is  $154 \text{ cm}^2$ . Its diameter is

- (a) 7 cm  
(b) 14 cm

- (c) 21 cm
  - (d) 28 cm
- 

10. The length of the minute hand of a clock is 14 cm. The area swept by the minute hand in 5 minutes is
- (a)  $153.9 \text{ cm}^2$
  - (b)  $102.6 \text{ cm}^2$
  - (c)  $51.3 \text{ cm}^2$
  - (d)  $205.2 \text{ cm}^2$
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- MCQ Questions For Class 10 Maths Areas Related To Circles Question 11. The radii of two circles are 19 cm and 9 cm respectively. The radius of the circle which has circumference equal to the sum of the circumference of two circles is
- (a) 35 cm
  - (b) 10 cm
  - (c) 21 cm
  - (d) 28 cm
- 

12. The area of the circle that can be inscribed in a square of side 6 cm, is
- (a)  $18\pi \text{ cm}^2$
  - (b)  $12\pi \text{ cm}^2$
  - (c)  $9\pi \text{ cm}^2$
  - (d)  $14\pi \text{ cm}^2$
- 

13. The radii of two circles are 4 cm and 3 cm respectively. The diameter of the circle having area equal to the sum of the areas of the two circles (in cm) is [Delhi 2011]
- (a) 5
  - (b) 7
  - (c) 10
  - (d) 14
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- MCQ on Area Related To Circles Class 10 Question 14. The perimeter (in cm) of a square circumscribing a circle of radius  $a$  cm, is [AI2011]
- (a)  $8a$
  - (b)  $4a$
  - (c)  $2a$
  - (d)  $16a$
-

15. If the area of a circle is numerically equal to twice its circumference, then the diameter of the circle is

- (a) 4 units
- (b)  $n$  units
- (c) 8 units
- (d) 2 units

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16. If the circumference of a circle is 352 metres, then its area in square metres is

- (a) 5986
- (b) 6589
- (c) 7952
- (d) 9856

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Area Related To Circle Class 10 MCQ Question 17. The diameter of a wheel is 1.26 m. The distance travelled in 500 revolutions is

- (a) 2670 m
- (b) 2880 m
- (c) 1980 m
- (d) 1596 m

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18. If the sum of the circumferences of two circles with radii  $R_1$  and  $R_2$  is equal to the circumference of a circle of radius  $R$ , then [NCERT Exemplar Problems]

- (a)  $R_1 + R_2 = R$
- (b)  $R_1 + R_2 > R$
- (c)  $R_1 + R_2 < R$
- (d) nothing definite can be said about the relation among  $R_1$ ,  $R_2$  and  $R$ .

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19. If the circumference of a circle and the perimeter of a square are equal, then [NCERT Exemplar Problems]

- (a) area of the circle = area of the square
- (b) area of the circle  $>$  area of the square
- (c) area of the circle  $<$  area of the square
- (d) nothing definite can be said about the relation between the areas of the circle and square.

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MCQ on Area Related To Circles Question 20. Area of the largest triangle that can be inscribed in a semi-circle of radius  $r$  units is [NCERT Exemplar Problems]

- (a)  $r^2$  sq. units
- (b)  $12r^2$  sq. units
- (c)  $2r^2$  sq. units
- (d)  $\frac{1}{2}r^2$  sq. units

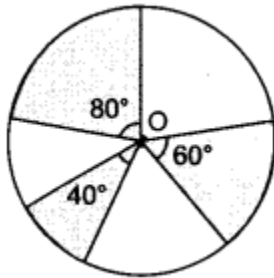


21. Match the columns

1. Area of quadrant	(A) $\frac{1}{2}\pi r^2$
2. Area of equilateral triangle	(B) $\frac{\sqrt{3}}{4} \times \text{side}^2$
3. Area of semicircle	(C) $\frac{\sqrt{3}}{2} \text{side}^2$
4. Perimeter of semicircle	(D) $\frac{1}{4}\pi r^2$
	(E) $\pi r$
	(F) $\pi r + 2r$

- (a) 1  $\hat{=}$  A, 2  $\hat{=}$  C, 3  $\hat{=}$  D, 4  $\hat{=}$  E  
 (b) 1  $\hat{=}$  B, 2  $\hat{=}$  C, 3  $\hat{=}$  F, 4  $\hat{=}$  E  
 (c) 1  $\hat{=}$  D, 2  $\hat{=}$  B, 3  $\hat{=}$  A, 4  $\hat{=}$  F  
 (d) 1  $\hat{=}$  D, 2  $\hat{=}$  B, 3  $\hat{=}$  E, 4  $\hat{=}$  F

22. In the given figure, three sectors of a circle of radius 7 cm, making angles of  $60^\circ$ ,  $80^\circ$  and  $40^\circ$  at the centre are shaded. The area of the shaded region (in  $\text{cm}^2$ ) is [Using  $\pi=22/7$ ] [Foreign 2012]



- (a) 77  
 (b) 154  
 (c) 44  
 (d) 22

Areas Related To Circles Question 23. If the difference between the and the radius of of a circle is 37 cm, then 22 using  $\pi=22/7$  the circumference (in cm) of the circle is: [Delhi 2013]

- (a) 154  
 (b) 44

- (c) 14
  - (d) 7
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24. If  $\pi$  is taken as 22/7, the distance (in metres) covered by a wheel of diameter 35 cm, in one revolution, is [AI2013]

- (a) 2.2
  - (b) 1.1
  - (c) 9.625
  - (d) 96.25
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Circle MCQ Pdf Question 25. If the circumferences of two circles are in the ratio 4: 9, then the ratio in their area is

- (a) 9: 4
  - (b) 4: 9
  - (c) 2: 3
  - (d) 16: 81
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26. The ratio of the areas of the incircle and circumcircle of a square is

- (a) 1: 2
  - (b) 1: 3
  - (c) 1: 4
  - (d) 1:  $\sqrt{2}$
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27. A circular wire of radius 42 cm is cut and bent into the form of a rectangle whose sides are in the ratio of 6: 5. The smaller side of the rectangle is

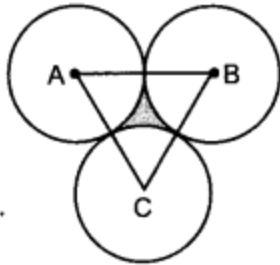
- (a) 30 cm
  - (b) 60 cm
  - (c) 70 cm
  - (d) 80 cm
-

28. Match the columns.

1. Area of sector	(A) $\frac{1}{2}\pi r^2$
2. Perimeter of sector	(B) $\frac{\theta}{360^\circ} \cdot \pi r^2$
3. Area of major segment	(C) Area of circle – area of minor segment
4. Perimeter of minor segment	(D) $2r + \text{length of arc}$ (E) Length of arc + length of corresponding chord.

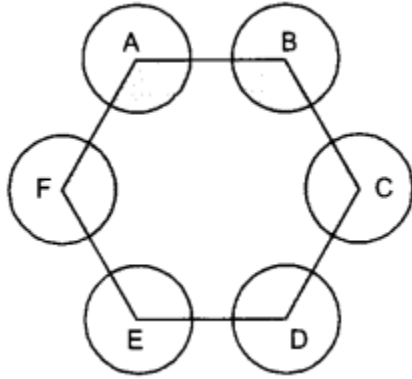
- (a) 1  $\hat{=}$  B, 2  $\hat{=}$  C, 3  $\hat{=}$  D, E  $\hat{=}$  4  
 (b) 1  $\hat{=}$  B, 2  $\hat{=}$  D, 3  $\hat{=}$  C, E  $\hat{=}$  4  
 (c) 1  $\hat{=}$  A, 2  $\hat{=}$  C, 3  $\hat{=}$  D, E  $\hat{=}$  4  
 (d) 1  $\hat{=}$  B, 2  $\hat{=}$  C, 3  $\hat{=}$  D, E  $\hat{=}$  4

29. ABC is an equilateral triangle. The area of the shaded region if the radius of each of the circle is 1 cm, is



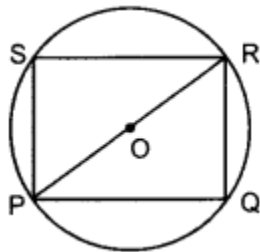
- (a)  $2 - \frac{\pi}{3}$       (b)  $\sqrt{3} - \pi$   
 (c)  $\sqrt{3} - \frac{\pi}{2}$       (d)  $\sqrt{3} - \frac{\pi}{4}$

30. ABCDEF is any hexagon with different vertices A, B, C, D, E and F as the centres of circles with same radius  $r$  are drawn. The area of the shaded portion is



- (a)  $\pi r \hat{A}^2$   
 (b)  $2\pi r \hat{A}^2$   
 (c)  $3\pi r \hat{A}^2$   
 (d)  $4\pi r \hat{A}^2$

31. In the figure, PQRS is a square and O is centre of the circle. If  $RS=10\sqrt{2}$ , then area of shaded region is



- (a)  $90\pi - 90$   
 (b)  $80\pi - 80$   
 (c)  $50\pi - 100$   
 (d)  $100\pi - 100$

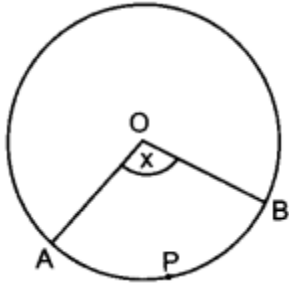
32. The diameter of the wheel of a bus is 1.4 m. The wheel makes 10 revolutions in 5 seconds. The speed of the vehicle (in kmph) is \_\_\_\_\_ .

33. The area of a quadrant of a circle whose circumference is 44 cm is \_\_\_\_\_ .

34. If the wheel of an engine of a train is 427m in circumference makes seven revolutions in 4 seconds, then the speed of the train is \_\_\_\_\_ km/h.

35. The area of the largest possible square inscribed in a circle of unit radius (in sq. units) is \_\_\_\_\_ .

36. In the fig., O is the centre of a circle. The area of sector OAPB is  $\frac{5}{8}$  of the area of the circle. Find x.



37. Find the perimeter of the given figure, where AEDĒ† is a semicircle and ABCD is a rectangle.

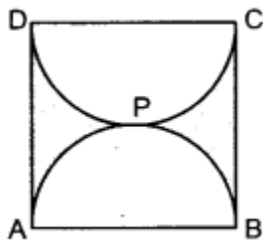
38. A bicycle wheel makes 5000 revolutions in moving 11 km. Find the diameter of the wheel. (use  $\pi=227$ )

39. A pendulum swings through an angle of  $30^\circ$  and describes an arc 8.8 cm in length. Find the length of pendulum, (use  $\pi=227$ )

40. An arc of a circle is of length  $5\pi$  cm and the sector it bounds has an area of  $20\pi$  cm<sup>2</sup>. Find the radius of the circle.

41. If the diameter of a semicircular protractor is 14 cm, then find its perimeter. [ $\pi=227$ ]

42. Find the perimeter of the shaded region in figure, if ABCD is a square of side 14 cm and APB and CPD are semicircles. [Use  $\pi=227$ ]



Answer:

Explanation:

$$\begin{aligned}
 \text{Perimeter} &= AD + BC + \text{length of DPC} + \text{length of APB} \\
 &= 14 + 14 + \pi r + \pi r \\
 &= 28 + 2\pi r = 227 - 142 = 72 \text{ cm}
 \end{aligned}$$


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**1. The area of a circle is  $49\pi \text{ cm}^2$ . Its circumference is**

(a)  $7\pi \text{ cm}$  (b)  $14\pi \text{ cm}$  (c)  $21\pi \text{ cm}$  (d)  $28\pi \text{ cm}$

**2. The perimeter of circular field is  $242 \text{ cm}$ . The area of the field is**

(a)  $9317 \text{ cm}^2$  (b)  $18634 \text{ cm}^2$  (c)  $4658.5 \text{ cm}^2$  (d) none of these

**3. The area of a circle is  $38.5 \text{ cm}^2$ . Its circumference is**

(a)  $62 \text{ cm}$  (b)  $12.1 \text{ cm}$  (c)  $11 \text{ cm}$  (d)  $22 \text{ cm}$

**4. The difference between the circumference and radius of a circle is  $37 \text{ cm}$ . The area of the circle is**

(a)  $111 \text{ cm}^2$  (b)  $184 \text{ cm}^2$  (c)  $154 \text{ cm}^2$  (d)  $259 \text{ cm}^2$

**5. 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

**6. On increasing the diameter of circle by  $40\%$ , its area will be increased by**

(a)  $40\%$  (b)  $80\%$  (c)  $96\%$  (d) none of these

**7. On decreasing the radius of the circle by  $30\%$ , its area is decreased by**

(a)  $30\%$  (b)  $60\%$  (c)  $45\%$  (d) none of these

**8. The area of the square is the same as the area of the circle. Their perimeter are in the ratio**

(a)  $1 : 1$  (b)  $\pi : 2$  (c)  $2 : \pi$  (d) none of these

**9. The areas of the two circles are in the ratio  $4 : 9$ . The ratio of their circumferences is**

(a)  $2 : 3$  (b)  $4 : 9$  (c)  $9 : 4$  (d)  $4 : 9$

10. In making 1000 revolutions, a wheel covers 88 km. The diameter of the wheel is  
(a) 14 m (b) 24 m (c) 28 m (d) 40 m
11. The diameter of a wheel is 40 cm. How many revolutions will it make a covering 176 m?  
(a) 140 (b) 150 (c) 160 (d) 166
12. The radius of wheel is 0.25 m. How many revolutions will it make in covering 11 km?  
(a) 2800 (b) 4000 (c) 5500 (d) 7000
13. Find the circumference of a circle of diameter 21 cm.  
(a) 62 cm (b) 64 cm (c) 66 cm (d) 68 cm
14. Find the area of a circle whose circumference is 52.8 cm.  
(a) 221.76 cm<sup>2</sup> (b) 220.76 cm<sup>2</sup> (c) 200.76 cm<sup>2</sup> (d) none of these.
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#### Question 1

A boy is cycling such that the wheels of the cycle are making 140 revolutions per minute. If the diameter of the wheel is 60cm, calculate the speed per hour with which the boy is cycling.

- (a) 15.8 km/hr  
(b) 16.2 km/hr  
(c) 11 km/hr  
(d) 18 km/hr

#### Question 2

A car has wheels which are 80 cm in diameter. How many complete revolutions does each wheel make in 10 minute when the car is travelling at a speed of 66km per hour?

- (a) 5000  
(b) 4375  
(c) 5400  
(d) 4400

#### Question 3

If the circumference of a circle and the perimeter of a square are equal, then

- (A) Area of the circle = Area of the square  
(B) Area of the circle > Area of the square  
(C) Area of the circle < Area of the square  
(D) Nothing definite can be said about the relation between the areas of the circle and square

**Question 4** The cost of fencing a circular field at the rate Rs24 per metre is Rs 5280. The field is to

be ploughed at the rate of Rs 0.50 per  $m^2$ . Find the cost of ploughing the field. (Take  $\pi = 22/7$ )

- a. Rs 2000
- b. Rs 1900
- c. Rs 1925
- d. Rs 1800

#### Question 5

The side of a square is 10cm. The area of circumscribed and inscribed circles.?

- (A)  $157 \text{ cm}^2$ ,  $78.5 \text{ cm}^2$
- (B)  $150 \text{ cm}^2$ ,  $75 \text{ cm}^2$
- (C)  $147 \text{ cm}^2$ ,  $78.5 \text{ cm}^2$
- (D)  $157 \text{ cm}^2$ ,  $79.5 \text{ cm}^2$

#### Question 6

The sum of the radii of two circles is 140cm and the difference of their circumference is 88cm. Find the diameters of the circles.

- (a) 150 cm, 88 cm
- (b) 158 cm, 122 cm
- (c) 160 cm, 120 cm
- (d) 154cm, 126 cm

#### Question 7

#### Question 8

The radii of two circles are 8 cm and 6 cm respectively. Find the radius of the circle having area equal to the sum of the areas of the two circles?

- (a) 9 cm
- (b) 10 cm
- (c) 15 cm
- (d) 11 cm

#### Question 9

Find the circumference of a circle whose area is 16 times the area of the circle with diameter 7cm

- (a) 44 cm
- (b) 88 cm
- (c) 22 cm
- (d) 66 cm

#### Question 10

If a square is inscribed in a circle, find the ratio of the areas of the circle and the square?

- a.  $\pi:2\pi:2$
- b.  $2:\pi^2:\pi$
- c.  $\pi:4\pi:4$
- d.  $4:\pi^4:\pi$

#### Question 11

If the sum of the areas of two circles with radii  $R_1$  and  $R_2$  is equal to the area of a circle of radius  $R$ , then

- (A)  $R_1 + R_2 = R$
- (B)  $R_1^2 + R_2^2 = R^2$



- (C)  $R_1 + R_2 < R$
- (D)  $R_1 + R_2 < R_2$

**Question 12**

The area of a circle inscribed in an equilateral triangle is  $154 \text{ cm}^2$ . Find the perimeter of the triangle. [ Use  $\pi = 22/7$  ]

- (A) 72.7 cm
- (B) 88 cm
- (C) 75 cm
- (D) 74.5 cm

**Question 13**

Which one of these is True

- (A) Distance travelled by a circular wheel of diameter  $z \text{ cm}$  in one revolution is  $2\pi z$  cm
- (B) The area of the circle inscribed in a square of side  $x \text{ cm}$ ,  $\pi x^2$  cm<sup>2</sup>
- (C) If the area of a circle is  $154 \text{ cm}^2$ , then its perimeter is 55 cm
- (D) The perimeter of a square circumscribing a circle of radius  $y \text{ cm}$  is  $8y \text{ cm}$

**Question 14**

A car travels 1 km distance in which each wheel makes 450 complete revolutions. Find the radius of its wheels.

- (A) 35.35 cm
- (B) 34.35 cm
- (C) 35.50 cm
- (D) None of these

**Question 15**

Two circles touch externally. The sum of their areas is  $58 \text{ cm}^2$  and the distance between their centres is 10 cm. Find the radii of the two circles

- (A) 6 cm, 4 cm
- (B) 7 cm, 3 cm
- (C) 9 cm, 1 cm
- (D) 8 cm, 2 cm