

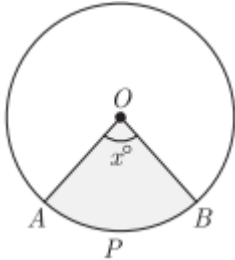
INDIAN SCHOOL AL WADI AL KABIR

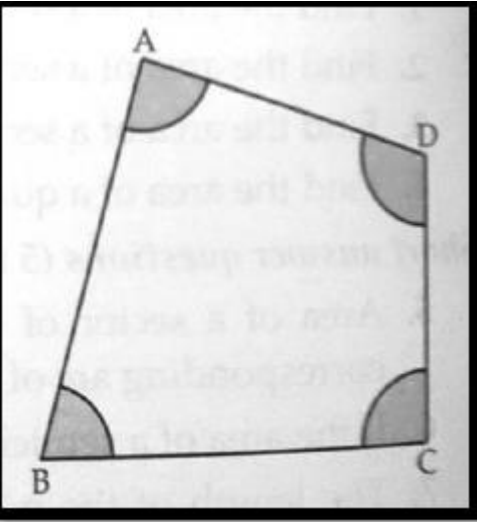
Class X, Mathematics

Worksheet-Areas Related to Circles

29 – 10 - 2022

Q. No.	SECTION A							
	Section A consists of 12 Questions of 1 Mark each.							
1.	The area of the square that can be inscribed in a circle of radius 6 cm is:							
	A	72 cm ²	B	6 cm ²	C	36 cm ²	D	144 cm ²
2.	A race track is in the form of a ring whose inner and outer circumference are 437 m and 503 m respectively. The area of the track is:							
	A	66 sq. cm.	B	4935 sq. cm.	C	9870 sq. cm	D	None of these
3.	In the given figure, OACB is a quadrant of a circle of radius 7 cm. The perimeter of the quadrant is:							
	A	11 cm	B	18 cm	C	25 cm	D	36 cm
4.	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	$R_1^2 + R_2^2 < R^2$
5.	If the circumference of a circle increases from 4π to 8π , then its area is:							
	A	halved	B	doubled	C	tripled	D	quadrupled
6.	The diameter of a circle whose area is equal to the sum of the areas of the two circles of radii 24 cm and 7 cm is:							
	A	31 cm	B	25 cm	C	62 cm	D	50 cm

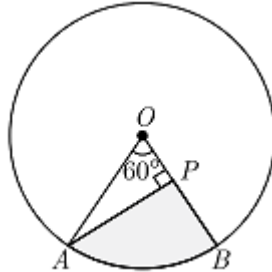
7.	If the perimeter of a circle is equal to that of a square, then the ratio of their areas is:							
	A	22:7	B	14:11	C	7:22	D	11:14
8.	The radius of a circle whose circumference is equal to the sum of the circumferences of the two circles of diameters 36 cm and 20 cm is:							
	A	56 cm	B	42 cm	C	28 cm	D	16 cm
9.	If diameter of a wheel is 1.26 m, what the distance covered in 500 revolutions?							
	A	1.38 km	B	4.64 km	C	2.46 km	D	1.98 km
10.	<p>In given fig., O is the centre of a circle. If the area of the sector OAPB is $\frac{5}{36}$ times the area of the circle, what is the value of x.</p> <div style="text-align: center;">  </div>							
	A	50°	B	60°	C	70°	D	80°
DIRECTION: In the question number 11 and 12, a statement of assertion (A) is followed by statement of Reason (R) . Choose the correct option								
11.	<p>Assertion: If the outer and inner diameter of a circular path is 10 m and 6 m then area of the path is $16\pi \text{ m}^2$.</p> <p>Reason: If R and r be the radius of outer and inner circular path, then area of path is $\pi(R_1^2 + R_2^2)$</p> <p>(a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A)</p> <p>(b) Both assertion (A) and reason (R) are true and reason (R) is not the correct explanation of assertion (A)</p> <p>(c) Assertion (A) is true but reason (R) is false.</p> <p>(d) Assertion (A) is false but reason (R) is true.</p>							

12.	<p>Assertion: If a wire of length 22 cm is bent in the shape of a circle, then area of the circle so formed is 40 cm^2 Reason: Circumference of the circle = length of the wire.</p> <p>(a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A) (b) Both assertion (A) and reason (R) are true and reason (R) is not the correct explanation of assertion (A) (c) Assertion (A) is true but reason (R) is false. (d) Assertion (A) is false but reason (R) is true.</p>
SECTION B	
Questions of 2 marks each	
13.	The length of the minute hand of a clock is 6cm. Find the area swept by it when it moves from 7:05 p.m. to 7:40 p.m.
14.	The wheel of a motorcycle is of radius 35 cm. How many revolutions are required to travel a distance of 11 m?
15.	<p>In the given figure, arcs have been drawn of radius 7cm each with vertices A, B, C and D of quadrilateral ABCD as centres. Find the area of the shaded region.</p> 
16.	Find the area of the corresponding major sector of a circle of radius 28 cm and the central angle 45° .

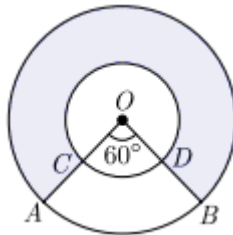
Section C

Questions of 3 marks each

17. In the given figure, AOB is a sector of angle 60° of a circle with centre O and radius 17 cm. If $AP \perp OB$ and $AP = 15$ cm, find the area of the region PAB.



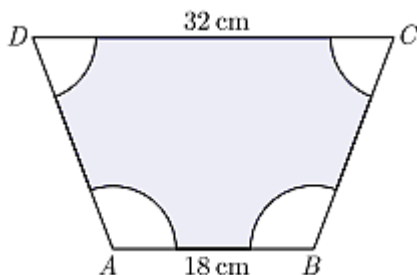
18. In the given figure, two concentric circles with centre O have radii 21 cm and 42 cm. If $\angle AOB = 60^\circ$, find the area of the shaded region. (Use $\pi = \frac{22}{7}$)



19. Sides of a right triangular field are 25 m, 24 m and 7 m. At the three corners of the field, a cow, a buffalo and a horse are tied separately with ropes of 3.5 m each to graze in the field. Find the area of the field that cannot be grazed by these animals.

Question of 5 marks

20. In the given figure ABCD is a trapezium with $AB \parallel DC$, $AB = 18$ cm and $DC = 32$ cm and the distance between AB and DC is 14 cm. If arcs of equal radii 7 cm taking A, B, C and D have been drawn, then find the area of the shaded region.

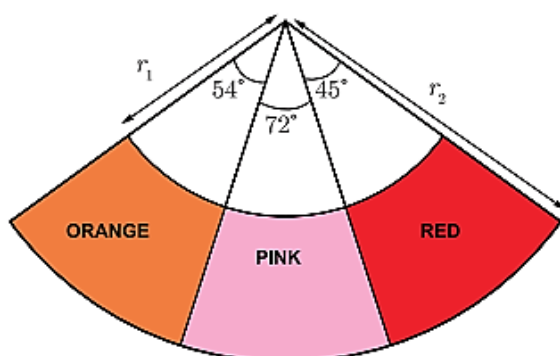


Question of 4 marks

21. **Case Study Based:**

Traditional Japanese Fans: Japanese fans are made of paper on a bamboo frame, usually with a design painted on them. A Japanese Fan symbolises friendship, respect and good wishes and are given on special occasions, as well as to help cool you down in hot weather. The fan is an immediately recognizable icon of Japanese culture. Today they remain an important artistic medium and stylish fashion accessory.

Lavanya hold a Japanese folding fan in her hand as shown in figure. It is shaped like a sector of a circle. The inner and outer radii are 14 cm and 21 cm. The fan has three coloured material.



- (i) If the region containing the pink colour makes an angle of $\theta = 72^\circ$ at the centre, then find the area of the region having pink colour.
- (ii) Find the area of the region having radius 14 cm.
- (iii) Find the perimeter of the fan?

Answers

Answers	1	A	2	B	3	C	4	B
	5	D	6	B	7	B	8	C
	9	D	10	A				
	11	c	12	d	13	66cm^2	14	5
	15	154cm^2	16	2156cm^2	17	91.38cm^2	18	3465cm^2
	19	64.75cm^2	20	196cm^2	21	(i) 154cm^2 (ii) 292.6cm^2 (iii) 104.7cm		