Mathematics

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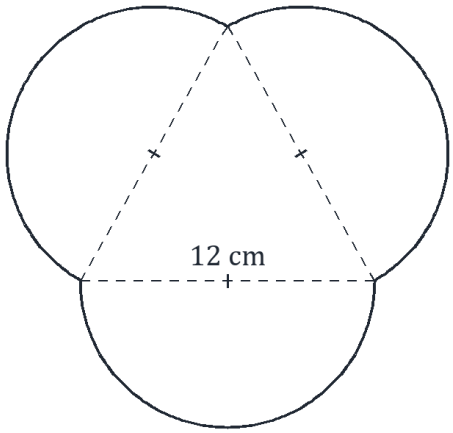
(Chapter – 6) (Measuring Space: Perimeter and Area) (Assignment 3)
(Class – 9)

Name _____ Date _____

Answer all 15 questions. Choose one option for each MCQ. Show your working. Use $\pi \approx 22/7$ unless specified otherwise. Leave answers in terms of π when asked.

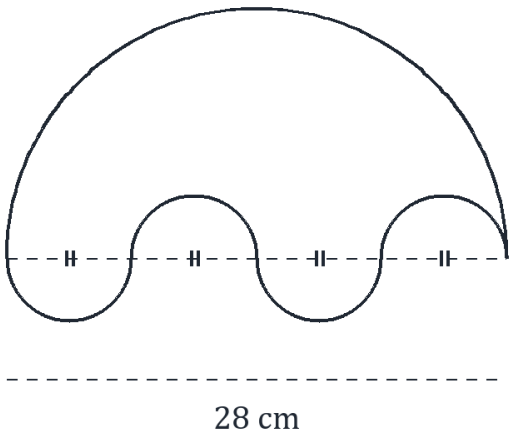
Section A: Multiple Choice Questions

1. Find the perimeters of the following shapes (taking the arcs to be quarter or half or three-quarters of a circle, as appropriate) (see figure):



(a) 12π cm
(b) 18π cm
(c) 36π cm
(d) $36 + 6\pi$ cm

2. Find the perimeters of the following shapes (taking the arcs to be quarter or half or three-quarters of a circle, as appropriate) (see figure):

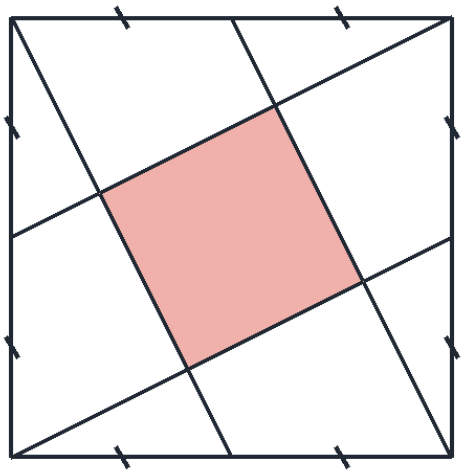


(a) 14π cm
(b) 21π cm
(c) 28π cm
(d) 42π cm

3. The area of a right-angled triangle is 54 sq. cm. One of its legs has length 12 cm. Find its perimeter.

(a) 21 cm
(b) 30 cm
(c) 36 cm
(d) 54 cm

4. What fraction of the square is shaded?



(a) 1/4 (b) 1/5
(c) 1/3 (d) 2/5

5. The base and perpendicular height of a triangle are both doubled. By what factor does its area increase?

(a) 2 (b) 3
(c) 4 (d) 8

Section B: Very Short Answer Questions

6. Calculate, correct to 3 significant figures, the circumference of a circle with: (iii) radius 12 cm.

Answer:

7. If the diameter of a car tyre is 56 cm, then: (i) How far does the car need to travel for the tyre to complete one revolution?

Answer:

8. A chord of a circle of radius 10 cm subtends 90° at the centre. Find the area of the corresponding: (i) minor sector (that subtends 90° at the centre). (Use $\pi \approx 3.14$.)

Answer:

9. Find the area of a quadrant of a circle whose circumference is 66 cm.

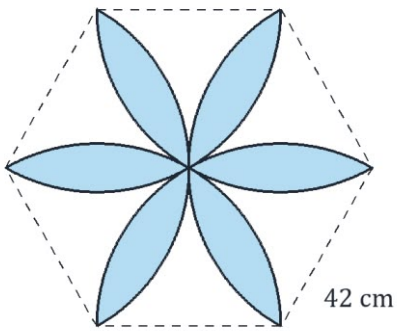
Answer:

10. A triangle with sides 3 units, 4 units and 5 units.
Find its area using Heron's formula.

Answer:

Section C: Short and Long Answer Questions

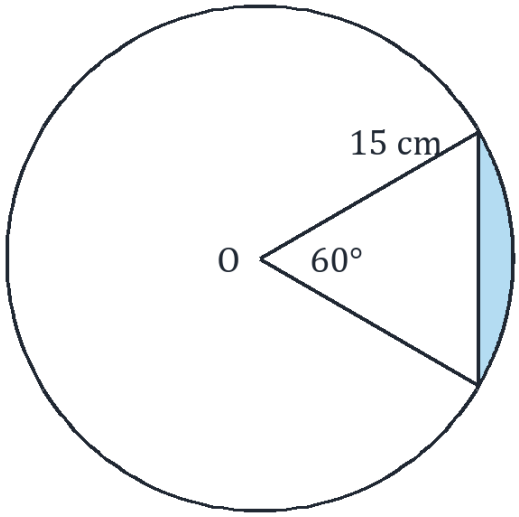
11. Find the total perimeter of all the petals in each of the given flowers.



The centres of the arcs are the vertices of the hexagon.

Answer:

12. A chord of a circle of radius 15 cm subtends an angle of 60° at the centre of the circle. Find the areas of the corresponding minor and major segments of the circle. (Use $\pi \approx 3.14$ and $\sqrt{3} \approx 1.73$.)



Answer:

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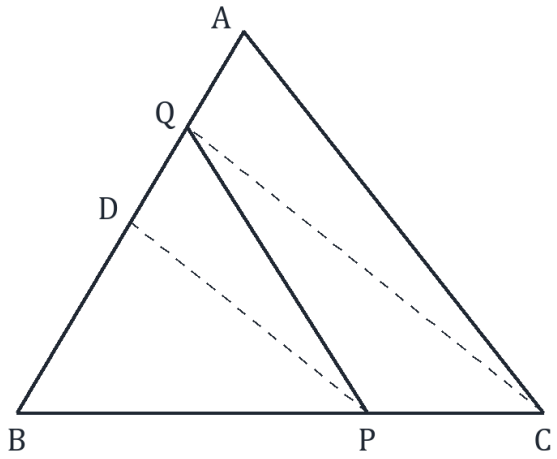
(Chapter – 6) (Measuring Space: Perimeter and Area) (Assignment 3)

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13. A circular pond of radius 7 m is surrounded by a path 3.5 m wide. Find the area of the path and the total length of its inner and outer boundaries.

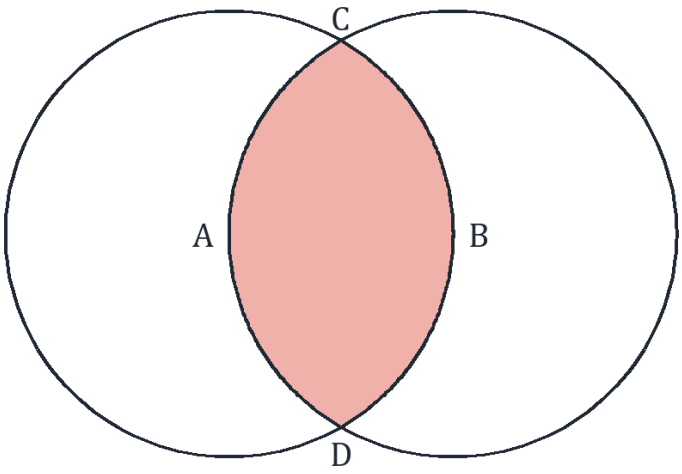
Answer:

14. In ΔABC, D is the midpoint of AB. P is any point on BC, and Q is a point on AB such that CQ || PD. PQ is joined (see figure). Prove that Area (ΔBPQ) = $\frac{1}{2}$ Area (ΔABC).



Answer:

15. The figure shows two circles passing through each other's centres. Find the area of the region enclosed by the two circles in terms of the common radius r.



Answer: