

CHAPTER-7 | Area

QUIZ
PART-13

1. The area of a polygon can be found by:

- A. Measuring its perimeter
- B. Dividing it into triangles
- C. Counting its vertices
- D. Measuring only one side (B)

Explanation : A polygon can be divided into triangles, and the total area is the sum of the areas of those triangles.

2. To find the area of a quadrilateral, it is commonly divided into:

- A. Two triangles
- B. Two rectangles
- C. Four squares
- D. Three circles (A)

Explanation : Drawing a diagonal divides a quadrilateral into two triangles, making the area easier to calculate.

3. A pentagon is divided into three triangles. The area of the pentagon is obtained by:

- A. Multiplying the three areas
- B. Adding the three areas
- C. Subtracting the smallest area
- D. Finding the average of the areas (B)

Explanation : The total area of a polygon equals the sum of the areas of all the triangles formed.

4. Which measurement is essential for finding the area of a triangle inside a polygon?

- A. Radius
- B. Base and corresponding height
- C. Diameter
- D. Circumference (B)

Explanation : The area of each triangle is calculated using $\frac{1}{2} \times \text{Base} \times \text{Height}$.

5. A regular hexagon can be divided into:

- A. Six congruent triangles
- B. Two rectangles
- C. Four squares
- D. Three circles (A)

Explanation : Joining the centre to all six vertices divides a regular hexagon into six congruent equilateral triangles.

6. The area of a regular hexagon with side length 4 cm is:

- A. $16\sqrt{3} \text{ cm}^2$
- B. 24 cm^2
- C. $24\sqrt{3} \text{ cm}^2$
- D. 48 cm^2 (C)

Explanation : Area of a regular hexagon = $6 \times (\frac{\sqrt{3}}{4} s^2)$. For $s = 4 \text{ cm}$, the area is $24\sqrt{3} \text{ cm}^2$.

7. If a polygon is divided into triangles without overlapping, the total area is:

- A. The product of the triangle areas
- B. The difference of the triangle areas
- C. The sum of the triangle areas
- D. Half the largest triangle's area (C)

Explanation : The areas of all non-overlapping triangles are added to obtain the polygon's total area.

8. Which statement is true for any simple polygon?

- A. It cannot be divided into triangles.
- B. It can always be divided into triangles.
- C. It always has four sides.
- D. It always has equal sides. (B)

Explanation : Every simple polygon can be triangulated, making area calculation easier.

9. Why is dividing a polygon into triangles useful?

- A. It changes the shape permanently.
- B. Triangle area formulas are easy to apply.
- C. It reduces the number of sides.
- D. It increases the area. (B)

Explanation : The area formula for a triangle is simple, allowing the total polygon area to be calculated efficiently.

10. Which statement about polygon area is correct?

- A. Polygon area depends only on the perimeter.
- B. Polygon area is found by adding the areas of the triangles formed.
- C. Polygon area is always equal to its perimeter.
- D. Polygon area cannot be calculated using triangles. (B)

Explanation : The chapter explains that polygons are divided into triangles, and their areas are added to obtain the total area.