# Area of a Polygon

### A. Choose the correct answer:

- 1. A polygon with all sides and angles equal is called a:
  - a) Regular polygon
  - b) Irregular polygon
  - c) Circle
  - d) Ellipse
- 2. The area of a regular hexagon can be divided into how many equilateral triangles?
  - a) 3
  - b) 4
  - c) 6
  - d) 8
- 3. The sum of the interior angles of a polygon with n sides is given by:
  - a) (n 2) × 180°
  - b) n × 180°
  - c) (n + 2) × 180°
  - d) (n 1) × 180°
- 4. If each side of a regular pentagon is 6 cm and the apothem is 4 cm, its area is:
  - a) 60 cm<sup>2</sup>
  - b) 48 cm<sup>2</sup>
  - c) 72 cm<sup>2</sup>
  - d) 120 cm<sup>2</sup>
- 5. A polygon with 6 sides is called a:
  - a) Hexagon
  - b) Pentagon
  - c) Octagon
  - d) Quadrilateral

## **B. Write the Missing Terms to Complete the Sentences:**

1. The area of a regular polygon =  $\frac{1}{2}$  × perimeter × \_\_\_\_\_

- 2. A polygon with unequal sides is called an \_\_\_\_\_ polygon
- 3. A polygon with 4 sides is called a \_\_\_\_\_
- 4. The formula to find the sum of interior angles of a polygon is \_\_\_\_\_  $\times$  180°

5. A regular polygon is made up of congruent \_\_\_\_\_\_ triangles

#### C. Figure out the answers to these questions:

- 1. Find the area of a regular hexagon with side 6 cm and apothem 5.2 cm
- 2. Calculate the sum of the interior angles of a polygon with 7 sides
- 3. A regular polygon has each side measuring 8 cm and apothem 6 cm Find its area
- 4. Find the number of sides of a polygon whose sum of interior angles is 1260°
- 5. The perimeter of a regular pentagon is 40 cm and apothem is 5.5 cm Find the area

#### **D.** Mark each sentence with a True ( $\checkmark$ ) or False (X):

- 1. A polygon with 5 sides is called a hexagon.
- 2. The area of a regular polygon is  $1/2 \times \text{perimeter} \times \text{apothem}$ .
- 3. The sum of the interior angles of a quadrilateral is 360°.
- 4. All regular polygons have equal sides and equal angles.
- 5. A square is a type of regular polygon. \_\_\_\_\_

#### E. Challenge yourself with these questions:

- 1. Find the area of a regular octagon with perimeter 64 cm and apothem 7.7 cm
- 2. Find the area of a regular polygon with perimeter 30 cm and apothem 5 cm
- 3. Calculate the sum of the interior angles of a polygon with 10 sides
- 4. Find the number of sides of a polygon if the sum of its interior angles is 1440°
- 5. The perimeter of a regular hexagon is 54 cm and its apothem is 7 cm Find its area