Angle Sum Property of a Quadrilateral

A. Choose the Correct Answer:

- 1. What is the sum of the interior angles of any quadrilateral?
 - a) 180°
 - b) 270°
 - c) 360°
 - d) 540°
- 2. If three angles of a quadrilateral are 90°, 85°, and 95°, the fourth angle is:
 - a) 100°
 - b) 90°
 - c) 85°
 - d) 75°

3. The angle sum property of a quadrilateral is derived using:

- a) A square
- b) Two triangles
- c) One circle
- d) A diagonal and a radius

B. Write the Missing Terms to Complete the Sentences:

- 1. The sum of the four interior angles of a quadrilateral is always ______ degrees.
- 2. A quadrilateral can be divided into ______ triangles by drawing a diagonal.
- 3. If three angles of a quadrilateral are given, the _____ angle can be found using the angle sum property.
- 4. In a rectangle, each angle measures _____ degrees.
- 5. If two angles of a quadrilateral are 110° and 95°, the sum of the other two angles is _____ degrees.

C. Figure out the answers to these questions:

- 1. The angles of a quadrilateral are in the ratio 2:3:4:5. Find the measure of each angle.
- 2. In quadrilateral ABCD, $\angle A = 100^\circ$, $\angle B = 85^\circ$, $\angle C = 95^\circ$. Find $\angle D$ and name the type of quadrilateral if possible.

- 3. Verify the angle sum property of a quadrilateral by drawing any quadrilateral and measuring all angles.
- 4. Two opposite angles of a quadrilateral are 120° and 110°, and the other two angles are equal. Find the equal angles.
- 5. Can a quadrilateral have all four interior angles greater than 90°? Explain why or why not.

D. Mark each sentence with a True (✔) or False (★):

- 1. The angle sum property is applicable to all quadrilaterals.
- 2. If one angle of a quadrilateral is 360°, it is possible.
- 3. The sum of interior angles of a quadrilateral is twice the sum of interior angles of a triangle.
- 4. All quadrilaterals must have at least one right angle.
- 5. In a parallelogram, opposite angles are equal, and the angle sum is 360°.

E. Challenge yourself with these questions:

- 1. Draw a quadrilateral and label all angles. Measure and verify the angle sum property using a protractor.
- 2. Create a real-world scenario where the angle sum property helps in finding a missing angle (e.g., room corners).
- 3. A quadrilateral has three angles measuring 70°, 90°, and 85°. Write an equation to find the fourth angle and solve it.
- 4. Compare the angle sum property of a triangle and a quadrilateral using diagrams.
- 5. Design a puzzle where students find missing angles in a quadrilateral based on clues using the angle sum property.