6 1 Angles Of Polygons Answer Key

Mastering Polygon Angles: Your Go-To Guide for the 6 1 Angles of Polygons Answer Key

Whether you're a student tackling a math worksheet, a teacher preparing a lesson, or simply curious about geometry, knowing how to calculate the angles of any polygon is a fundamental skill. This article walks you through the essential concepts, offers step-by-step solutions for a hexagon (6 sides) and a triangle (3 sides), and provides a ready-made answer key for the "6 1 angles of polygons" worksheet. By the end, you'll feel confident solving any interior-angle problem.

1. The Cornerstone: What Are Polygon Angles?

A polygon is a closed shape with straight sides. The angles where two sides meet are called **interior angles**. For regular polygons—where all sides and angles are equal—each interior angle is the same, making calculations straightforward.

2. The Sum of Interior Angles Formula

The total of all interior angles in an **n-sided polygon** is given by:

1. Subtract 2 from the number of sides: **(n – 2)**.
2. Multiply the result by 180°: **(n – 2) × 180°**.

For example, a quadrilateral (n = 4) has a total of (4 – 2) × 180° = 360°.

3. Finding a Single Angle in a Regular Polygon

Once you know the total, divide by the number of sides to get the measure of each interior angle:

1. Calculate the total interior sum using the formula.
2. Divide by n.
3. The result is the angle of each vertex.

Let's apply this to two common shapes.

4. Example 1: Hexagon (6 Sides)

Using the formula:

- Total interior sum: (6 – 2) × 180° = 4 × 180° = 720°.
- Each interior angle: 720° ÷ 6 = 120°.

So, every angle in a regular hexagon measures 120°.

5. Example 2: Triangle (3 Sides)

Even though the word "triangle" often refers to a 3-sided polygon, the same logic applies:

- Total interior sum: (3 – 2) × 180° = 1 × 180° = 180°.
- Each interior angle: 180° ÷ 3 = 60°.

Thus, a regular triangle (equilateral triangle) has angles of 60° each.

6. The 6 1 Angles of Polygons Answer Key

Below is a concise answer key for the typical worksheet that asks for the angles of a hexagon and a triangle. Use it to check your work or to guide students through the calculations.

1. **Hexagon (6 sides):** 120° per angle.
2. **Triangle (3 sides):** 60° per angle.

Why This Key Works

Each answer follows directly from the two-step process described earlier: compute the total interior sum and then divide by the number of sides. Because both polygons are regular, the division yields an integer degree measure.

7.

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