Subject: Mathematics

Class: 8

Topic: Angle Sum Property of Polygons

Levels: Basic, Intermediate, Advanced

Level: Basic

1. What is the sum of the interior angles of a triangle? (Hint: ? + ? + ? = ?)

2. Find the sum of interior angles of a quadrilateral using the formula (n - 2) × 180°.

3. How many sides (n) does a Pentagon have? _____

4. If a polygon has 6 sides, it is called a _____.

5. True or False: The sum of exterior angles of any polygon is always 360°.

6. A regular polygon has all sides and all _____ equal. (?)

7. Calculate the sum of interior angles for a polygon with n = 7 sides.

8. What is the measure of each interior angle of a square? _____

9. If the sum of angles of a polygon is 540°, how many sides does it have? _____

10. Draw a simple 4-sided figure and mark its interior angles with ?.

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Level: Intermediate

1. Find the value of 'x' if the angles of a quadrilateral are 110°, 70°, 80°, and x.

2. A regular polygon has 8 sides. Calculate the measure of each exterior angle.

3. If each interior angle of a regular polygon is 108°, find the number of sides.

4. Rahul bought a protractor for ? 25. He measures an angle of a regular hexagon. What should it be?

5. Find the sum of interior angles of a Decagon (n = 10).

6. In a quadrilateral ABCD, ?A = 100?, ?B = 70?, ?C = 110?. Find ?D.

7. Ratio of angles of a triangle is 2:3:5. Find the largest angle. (?)

8. What is the measure of each exterior angle of a regular Pentagon? (Use 360°/n)

9. An interior angle and its adjacent exterior angle always sum up to _____ degrees.

10. How many triangles can a convex polygon with 'n' sides be divided into? (n - 2)

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Level: Advanced

1. The interior angle of a regular polygon is 5 times its exterior angle. Find the number of sides.

2. Find 'x' in a pentagon where angles are x, x+20, x+40, x+60, and x+80.

3. A playground is in the shape of a regular Octagon. Find the sum of its interior angles.

4. If the sum of interior angles is 1800°, find the name of the polygon. (n = ?)

5. The ratio of an interior angle to an exterior angle of a regular polygon is 7:2. Find n.

6. Three angles of a hexagon are 120° each. The others are equal. Find the measure of the others.

7. Calculate the value of ? if the exterior angles of a quadrilateral are x, 2x, 3x, and 4x.

8. A fence around a hexagonal park costs ? 500 per side. If all interior angles are 120?, is it regular?

9. Find the number of sides of a polygon if the sum of its interior angles is 12 right angles.

10. Two angles of a quadrilateral are 70° each. The other two are in ratio 3:4. Find the largest angle.