

Classifying Triangles and Quadrilaterals

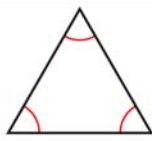
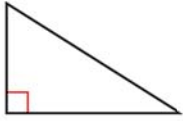
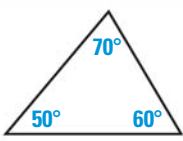
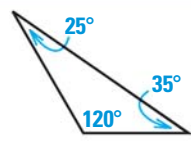


A **polygon** is a closed plane figure whose sides are segments that intersect only at their endpoints. Each endpoint is called a **vertex** of the polygon. Polygons are classified by the number of sides they have.

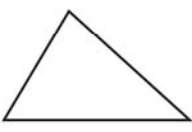
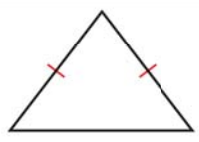
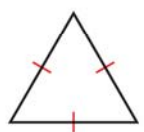
				
Triangle 3 sides	Quadrilateral 4 sides	Pentagon 5 sides	Hexagon 6 sides	Octagon 8 sides

Triangles are classified by their angle measures. If two angles have the same measure, they are **congruent angles**. In a diagram, matching arcs are used to show congruent angles.

A **right angle** measures 90° and is marked by a square corner. An **acute angle** measures less than 90° , and an **obtuse angle** measures more than 90° . The sum of the measures of the angles of a triangle is 180° .

			
Equiangular triangle 3 congruent angles	Right triangle 1 right angle	Acute triangle 3 acute angles	Obtuse triangle 1 obtuse angle

Triangles are also classified by their side lengths. If two sides have the same length, they are **congruent sides**. In a diagram, matching tick marks are used to show congruent sides.

		
Scalene triangle No congruent sides	Isosceles triangle At least 2 congruent sides	Equilateral triangle 3 congruent sides

EXAMPLE

Classify the figure using all names that apply.

List the characteristics of the figure.

The figure is a polygon with 3 sides, so it is a triangle.

The triangle has no congruent sides, so it is a scalene triangle.

The triangle includes one right angle, so it is a right triangle.

► The figure is a scalene right triangle.

