4.1 Classifying Triangles

Parts of a Triangle:

Sides of ABC are AB, BC, and CA

The vertices are A, B, and C

The angles are <ABC or <B, <BCA or <C, and <BAC or <A

Classifying Triangles by their Angles:

1. Acute Triangle-all angles are acute angles
2. Obtuse Triangle- one angle is obtuse
3. Right Triangle- one angle is a right angle

Equiangular- An acute triangle with all angles congruent (all will be 60 )

Classifying Triangles by their Sides:

1. Scalene Triangle- no two sides are congruent
2. Isosceles Triangle- at least two sides are congruent
3. Equilateral Triangle- all three sides are congruent

**Classify PQO by its sides. Then determine if the triangle is a right triangle.**

**P(-1, 2), Q(6, 3), O(0, 0)**

**Theorem 4.1 (Angle Sum)- The sum of the measures of the angles of a triangle is 180.**

\*Exterior Angle- formed by one side of a triangle and extension of another side.

\*Remote Interior Angles- the interior angles of the triangle not adjacent to a given exterior angle.

Theorem 4.3 (Exterior Angle Theorem)- the measure of an exterior angle of a triangle is equal to the sum of the measures of the two remote interior angles.

Ex. Find m<JKM.

**Corollary to a theorem- is a statement that can be proved easily using the theorem.**

**Corollary to the Triangle Sum Theorem- The acute angles of a right triangle are complementary.**