Applying Parallel Lines to Polygons

Objectives

1. Classify triangles according to sides and to angles.
2. State and apply the theorem and the corollaries about the sum of the measures of the angles of a triangle.
3. State and apply the theorem about the measure of an exterior angle of a triangle.
4. Recognize and name convex polygons and regular polygons.
5. Find the measures of interior angles and exterior angles of convex polygons.
6. Understand and use inductive reasoning.
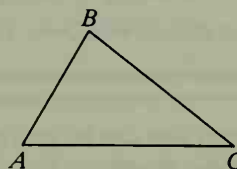
3-4 *Angles of a Triangle*

A **triangle** is the figure formed by three segments joining three noncollinear points. Each of the three points is a **vertex** of the triangle. (The plural of *vertex* is *vertices*.) The segments are the **sides** of the triangle.

Triangle ABC ($\triangle ABC$) is shown.

Vertices of $\triangle ABC$: points A, B, C

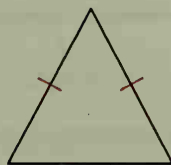Sides of $\triangle ABC$: $\overline{AB}$, $\overline{BC}$, $\overline{CA}$

Angles of $\triangle ABC$: $\angle A$, $\angle B$, $\angle C$
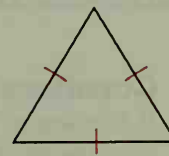
A triangle is sometimes classified by the number of congruent sides it has.

Scalene triangle
No sides congruent

Isosceles triangle
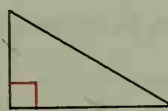At least two sides congruent

Equilateral triangle
All sides congruent
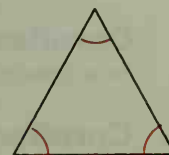
Triangles can also be classified by their angles.

Acute $\triangle$
Three acute $\angle$s

Obtuse $\triangle$
One obtuse $\angle$

Right $\triangle$
One right $\angle$

Equiangular $\triangle$
All $\angle$s congruent