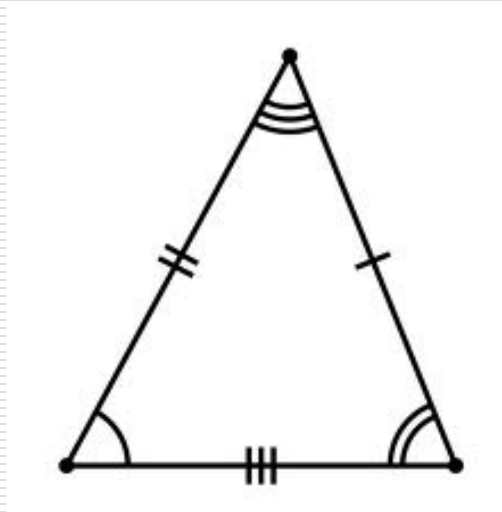# Triangle Inequality Notes
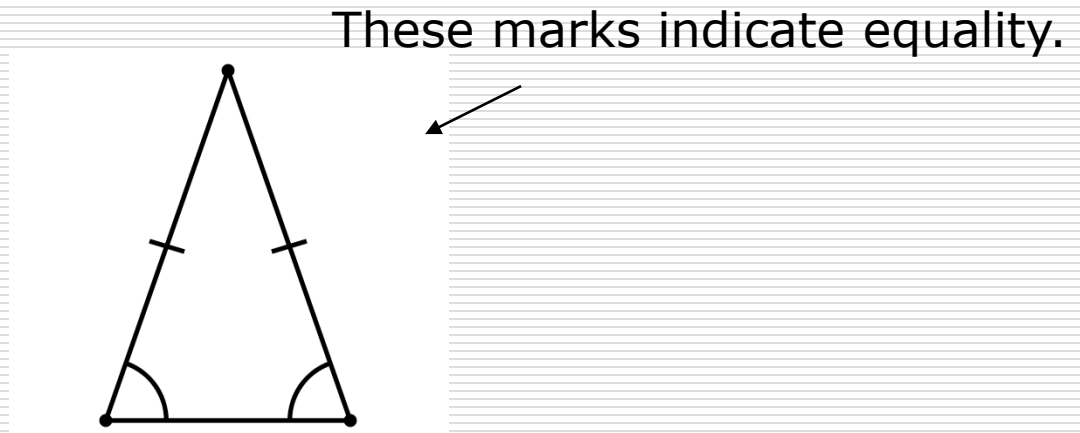
Triangle Inequality Theorem

- **Scalene triangle:** A triangle that has no congruent (equal) sides.
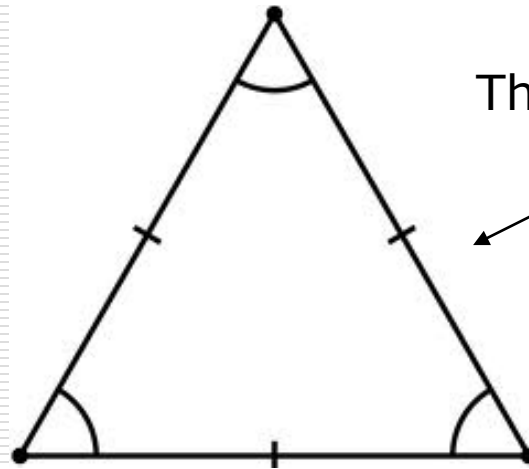 - None of their angles are congruent either

Isosceles Triangles

- **Isosceles triangle:** A triangle with at least two congruent sides
  - They have two congruent angles also

These marks indicate equality.

Equilateral Triangles

☐ **Equilateral triangle:** A triangle with three congruent sides

   ■ They have three congruent angles too
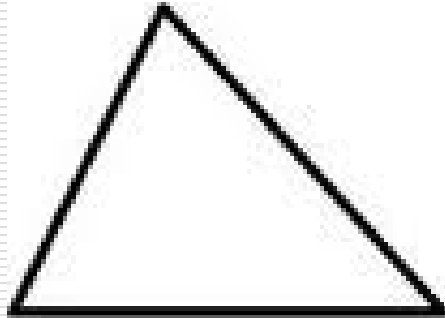
These marks indicate equality.

Classifying Triangles

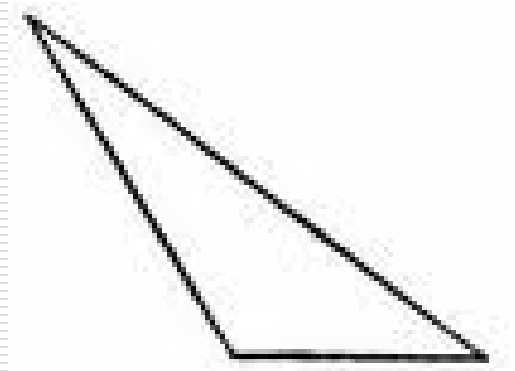- Triangles can also be classified by their angles

Acute Triangles

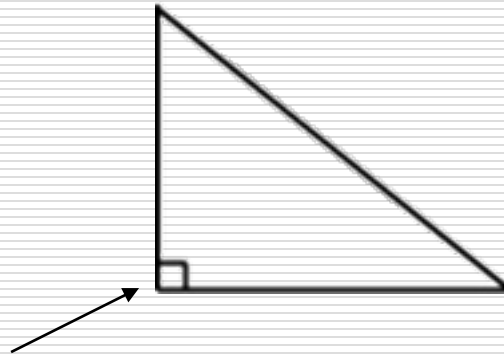- **Acute triangle:** A triangles whose angles are all less than 90 °

Obtuse Triangles

- **Obtuse triangles:** A triangle that has an angle greater than 90°

Types of Triangles

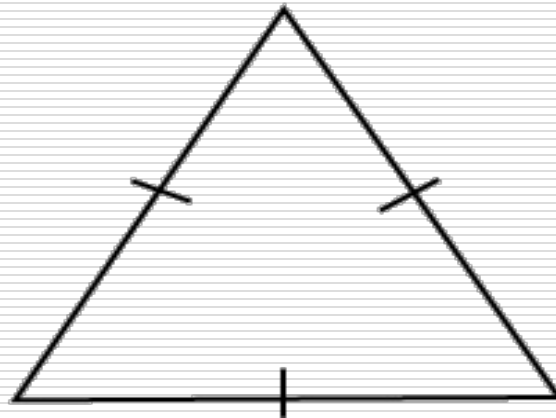- **Right triangle:** A triangle that has only one right angle.

This box indicates a right angle or a 90-degree angle.

Classifying Triangles

Classifying Triangles
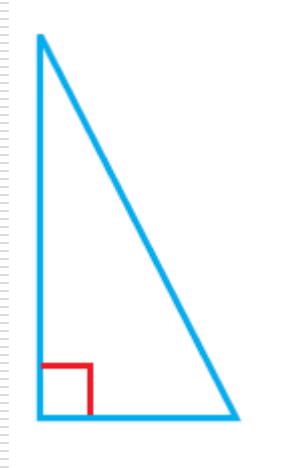
☐ Classify the triangle by its sides and angles:

Acute Equilateral

• All sides equal

• All angles less than 90°

Classifying Triangles

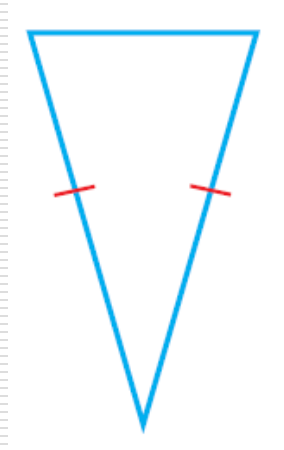☐ Classify the triangle by its sides and angles:

Right Scalene

• One right angle

• All sides are different lengths

Classifying Triangles

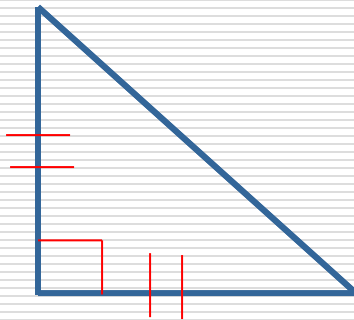☐ Classify the triangle by its sides and angles:

Acute Isosceles

• Two sides congruent

• All angles less than 90°

Classifying Triangles

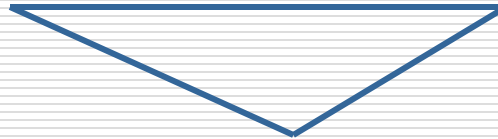☐ Classify the triangle by its sides and angles:

Right Isosceles

• Two sides are congruent

• One 90° angle

Classifying Triangles

☐ Classify the triangle by its sides and angles:

Obtuse Scalene

- All sides different lengths

- One angle greater than 90°

Classifying Triangles

☐ Classify the triangle by its sides and angles:

Obtuse Isosceles

• Two sides are congruent

• One angle greater than 90°

Interior Angles

- **Interior angles:** An **interior angle** (or **internal angle**) is an angle formed by two sides of a simple polygon that share an endpoint

- Interior angles of a triangle always equal 180 degrees.

Measuring Angles

☐ You measure angles with a **protractor.**

Notice there are two scales. Be careful which 0 you start at.

90^0

This point is 0

This point is 0.

This point goes at the vertex of the angle