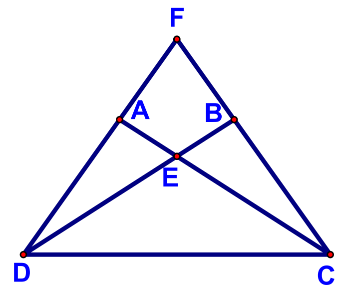
Types of Triangles - Lesson 3-6

Here's the warmup!

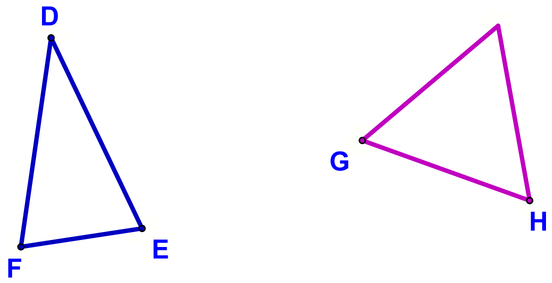
Given: $\angle FCA \cong \angle FDB$
$\overline{FD} \cong \overline{FC}$

Prove: $\overline{AD} \cong \overline{BC}$

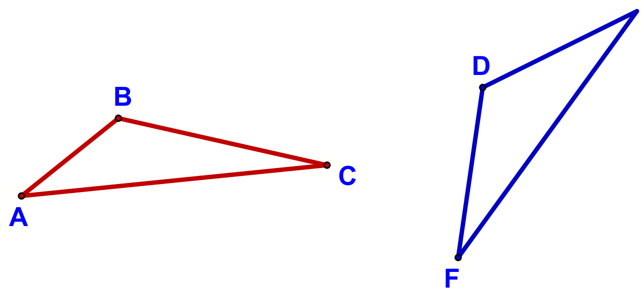


Statements	Reasons

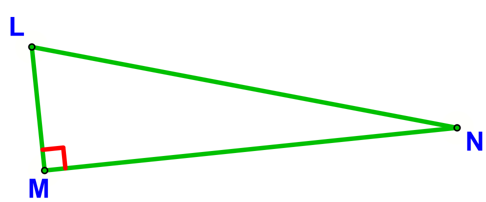
Today, we are talking about classifying different types of triangles. These are shown below. Make sure you know them all! We'll begin by classifying triangles by the measures of their angles:



An ***acute triangle*** is a triangle with three acute angles (e.g., ΔDEF is often acute & ΔGHI is *always* an acute triangle).



An ***obtuse triangle*** is a triangle with one obtuse angle (e.g., ΔABC & ΔDEF can be an obtuse triangles).

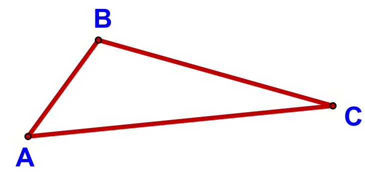


A ***right triangle*** is a triangle with a right angle (e.g., ΔLMN is a right triangle).

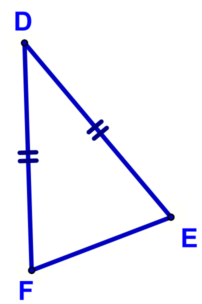
The side opposite the right angle is called the ***hypotenuse***.

The sides that form the right angle are called the ***legs***.

And then continue by classifying triangles by the lengths of their sides:



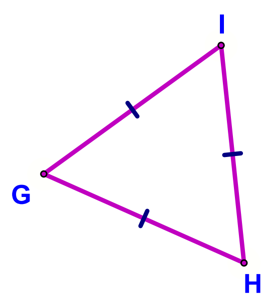
A ***scalene triangle*** is a triangle with three sides of different length (e.g., ΔABC is almost always a scalene triangle).



An ***isosceles triangle*** is a triangle with at least two sides the same length (e.g., ΔDEF is an isosceles triangle).

The congruent sides of an isoceles triangle are called the ***legs***. The other side is called the ***base***.

The ***vertex angle*** is the included angle between the legs. The other two angles are called the ***base angles***.



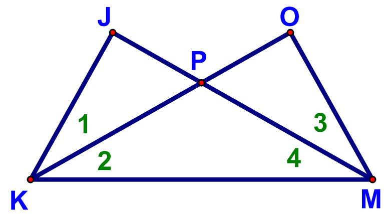
An ***equilateral triangle*** is a triangle with three sides the same length (e.g., ΔGHI is an equilateral triangle).

An ***equiangular triangle*** is a triangle with three angles the same measure (e.g., ΔGHI is an equilangular triangle).

And we'll finish with an example proof that used some of these classifications (should be about 9 steps):

Given: $\angle 1 \cong \angle 3$
$\angle 2 \cong \angle 4$
$\overline{JP} \cong \overline{PO}$

Prove: $\triangle KPM$ is isosceles



Statements	Reasons