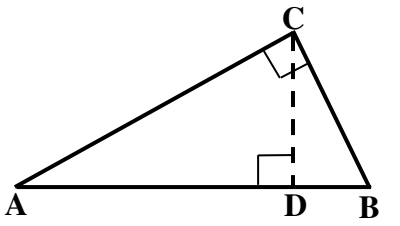
Geometry Note-Taking Guide **Name:**_____

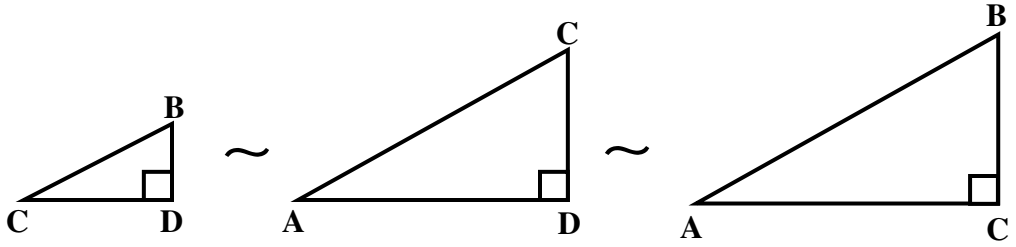
Section 6.7 – Similar Right Triangles

The height of a triangle can also be referred to as the _____.

Similar Right Triangles Theorem

If the altitude is drawn to the hypotenuse of a right triangle, then the two triangles formed are **similar** to the original triangle and to each other.



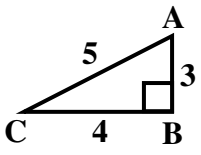


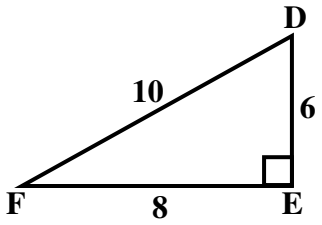
$\Delta CBD \sim \Delta ACD, \Delta ACD \sim \Delta ABC$, and $\Delta CBD \sim \Delta ABC$

Recall:
If two triangles are similar, then their side lengths are _____.

In other words, the ratios of their corresponding sides are _____.

Ex: Given $\Delta ABC \sim \Delta DEF$, then $\angle A \cong \angle D, \angle B \cong \angle E$, and $\angle C \cong \angle F$ and most important $\frac{AB}{DE} = \frac{BC}{EF} = \frac{AC}{DF}$.





$\frac{AB}{DE} = \frac{3}{6} = \frac{1}{2}$

$\frac{BC}{EF} = \frac{4}{8} = \frac{1}{2}$

$\frac{AC}{DF} = \frac{5}{10} = \frac{1}{2}$

Strategy for Solving Similar Right Triangle Problems:

1. Draw three separate triangles and label each triangle with any given information.

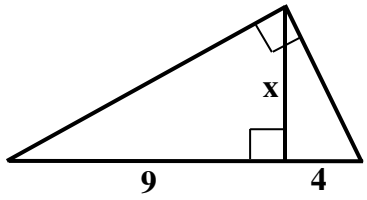
2. Based on the information given, set up a proportion to solve for a length or variable.

3. To solve a proportion you first _____.

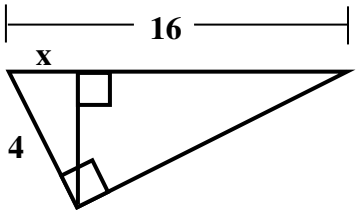
Ex 1:

Find the value of each variable.

a)



b)



Ex 2:

Find AC.