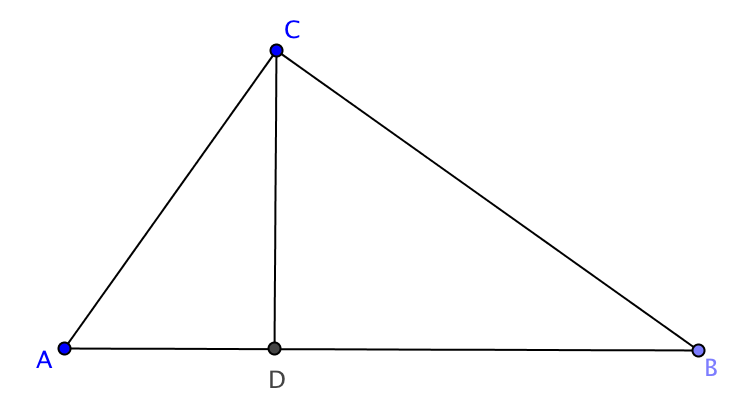
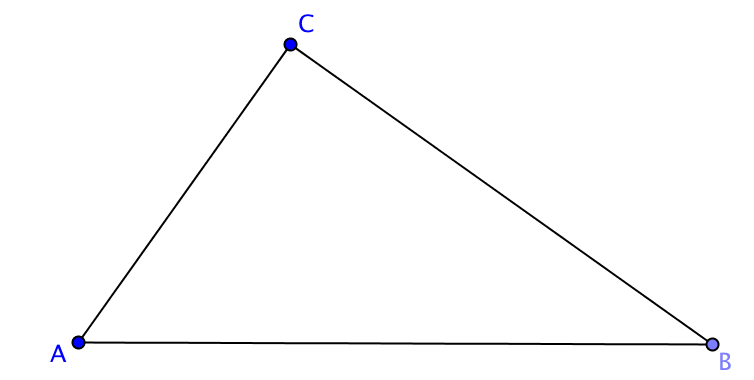
**Activity 4.5.2b Proving The Right Triangle Similarity Theorem**

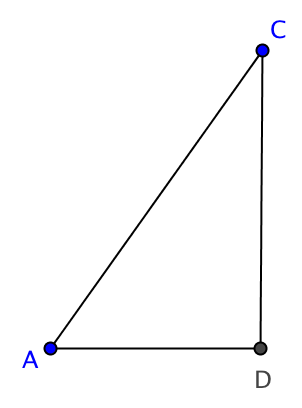
In Activity 4.5.1 you may have noticed that the altitude is drawn to the hypotenuse of a right triangle forms similar triangle. We can now state that conjecture as theorem.

**Right Triangle Similarity 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.

Given: ∆ABC with *ACB* a right angle   
 is the altitude to (and therefore

Part I: Prove

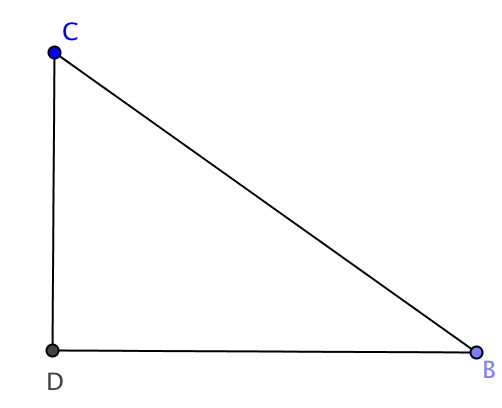
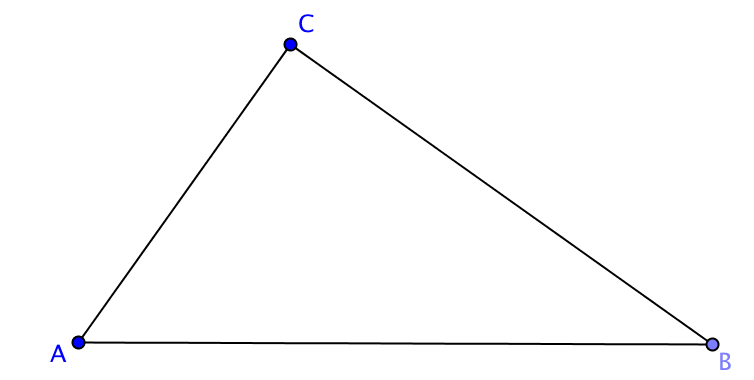
 \_\_\_\_ \_\_\_\_ because of the reflexive property



\_\_\_\_ is a right angle because\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_ \_\_\_\_ because\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

because \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

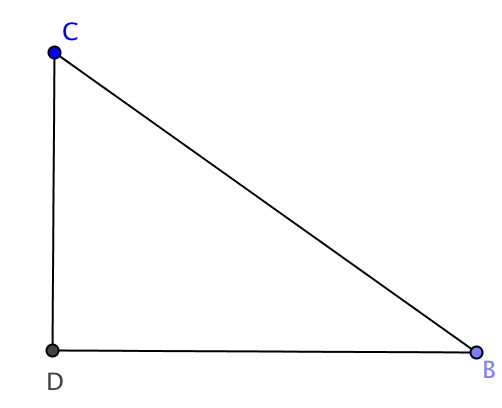
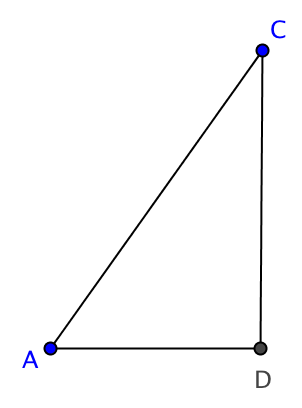
Part II: Prove

\_\_\_\_ \_\_\_\_ because\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_ is a right angle because\_\_\_\_\_\_\_\_\_\_

\_\_\_\_ \_\_\_\_ because\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

because \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



Part III: Prove

E1.*ACD* + m*BCD* = 90o because\_\_\_\_\_\_\_\_\_\_\_\_

E2. + m*A* = 90o because\_\_\_\_\_\_\_\_\_\_\_\_

Use E1 and E2 to show that *A*=\_\_\_\_

\_\_\_\_ and \_\_\_\_ are right angles because\_\_\_\_\_\_\_\_

\_\_\_\_ \_\_\_\_ because\_\_\_\_\_\_\_\_

because \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_