NAME _____ DATE _____ PERIOD _____

Practice
Using the Pythagorean Theorem and Similarity

1. In right triangle *ABC*, altitude *CD* is drawn to its hypotenuse. Select **all** triangles which must be similar to triangle *ABC*.
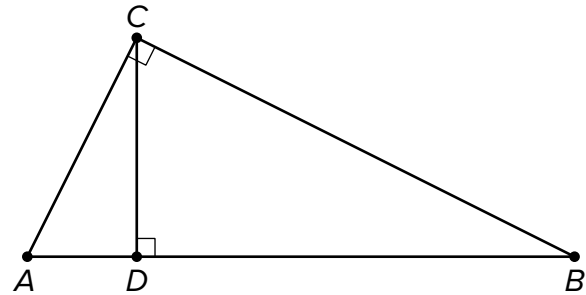
A. *ABC*

B. *ACD*

C. *BCD*

D. *BDC*

E. *CAD*

F. *CBD*

2. In right triangle *ABC*, altitude *CD* with length *h* is drawn to its hypotenuse. We also know $AD = 12$ and $DB = 3$. What is the value of *h*?
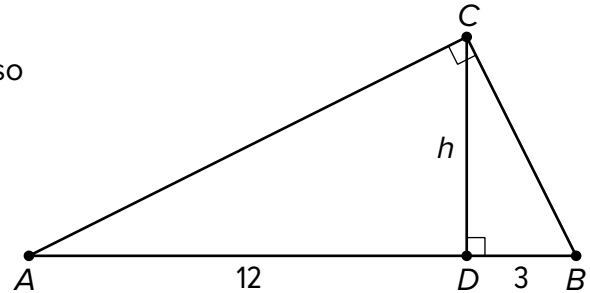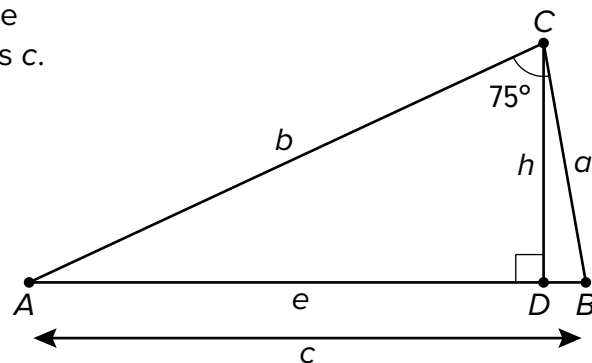
3. In triangle *ABC* (*not* a right triangle), altitude *CD* is drawn to side *AB*. The length of *AB* is *c*. Which of the following statements must be true?

A. The measure of angle *ACB* is the same measure as angle *B*.

B. $b^2 = c^2 + a^2$.

C. Triangle *ADC* is similar to triangle *ACB*.

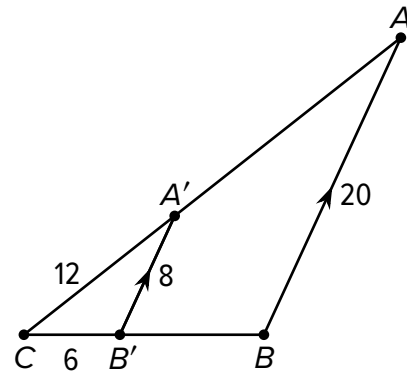**D.** The area of triangle *ABC* equals $\frac{1}{2}h \cdot c$.

4. Quadrilateral *ABCD* is similar to quadrilateral *A'B'C'D'*. Write 2 equations that could be used to solve for missing lengths. **(Lesson 3-12)**

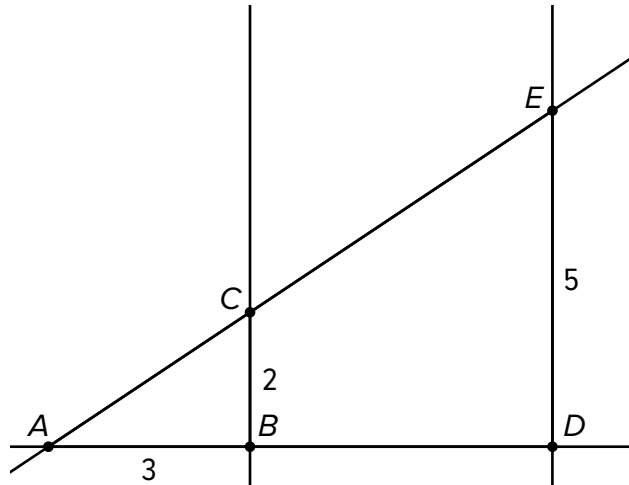**5.** Segment *A'B'* is parallel to segment *AB*. **(Lesson 3-11)**

   a. What is the length of segment *A'A*?

   b. What is the length of segment *B'B*?

6. Lines *BC* and *DE* are both vertical. What is the length of *AD*? **(Lesson 3-12)**

   A. 4.5

   B. 5

   C. 7.5

   D. 10

7. Triangle *DEF* is formed by connecting the midpoints of the sides of triangle *ABC*. Select **all** true statements. **(Lesson 3-5)**

   A. Triangle *BDE* is congruent to triangle *FCE*

   B. Triangle *BDE* is congruent to triangle *FDA*

   C. *BD* is congruent to *FE*

   D. The length of *BC* is 8

   E. The length of *BC* is 6