

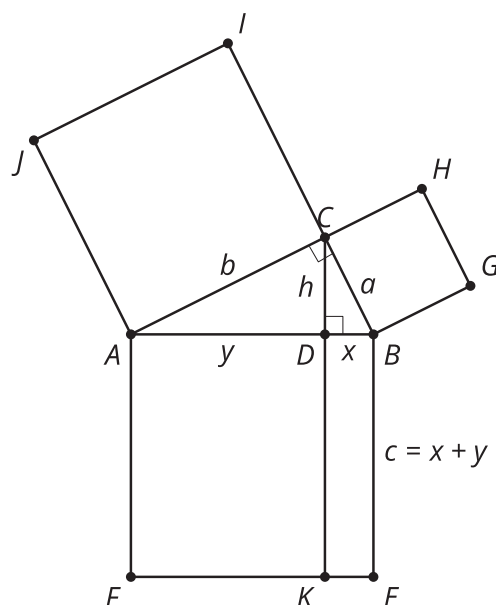
Lesson 14 Practice Problems

1. Which of the following are right triangles?

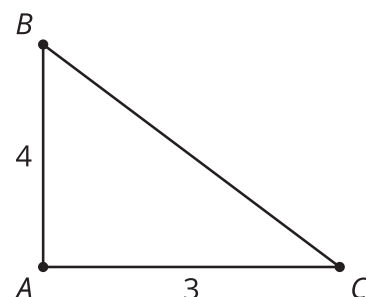
- A. Triangle ABC with $AC = 6$, $BC = 9$, and $AB = 12$
- B. Triangle DEF with $DE = 8$, $EF = 10$, and $FD = 13$
- C. Triangle GHI with $GI = 9$, $HI = 12$, and $GH = 15$
- D. Triangle JKL with $JL = 10$, $KL = 13$, and $JL = 17$

2. In right triangle ABC , a square is drawn on each of its sides. An altitude CD is drawn to the hypotenuse AB and extended to the opposite side of the square on FE . In class, we discussed Elena's observation that $a^2 = xc$ and Diego's observation that $b^2 = yc$. Mai observes that these statements can be thought of as claims about the areas of rectangles.

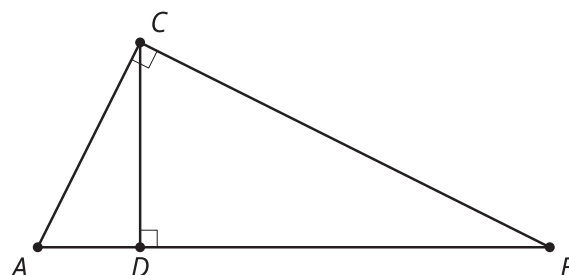
- a. Which rectangle has the same area as $BGHC$?
- b. Which rectangle has the same area as $ACIJ$?



3. Andre says he can find the length of the third side of triangle ABC and it is 5 units. Mai disagrees and thinks that the side length is unknown. Do you agree with either of them? Show or explain your reasoning.

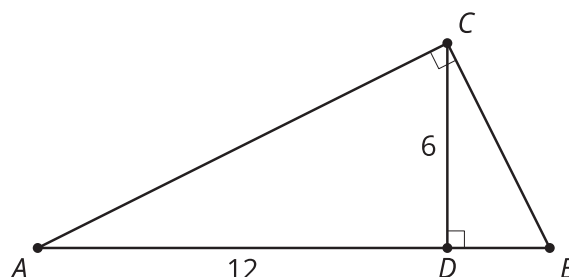


4. In right triangle ABC , altitude CD is drawn to its hypotenuse. Find 2 triangles which must be similar to triangle ABC .



(From Unit 3, Lesson 13.)

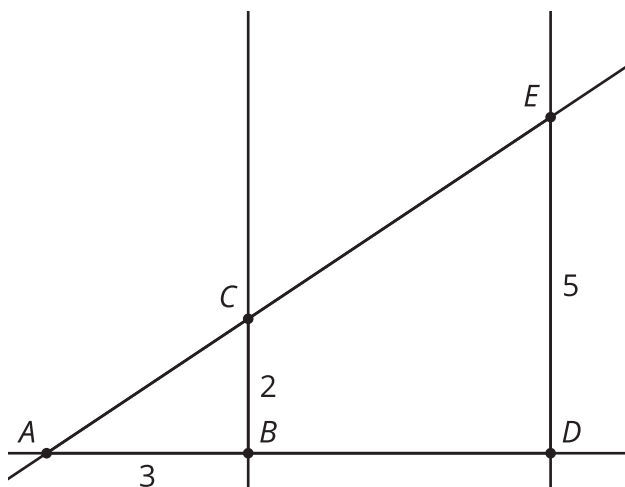
5. In right triangle ABC , altitude CD with length 6 is drawn to its hypotenuse. We also know $AD = 12$. What is the length of DB ?



- A. $\frac{1}{2}$
- B. 3
- C. 4
- D. 6

(From Unit 3, Lesson 13.)

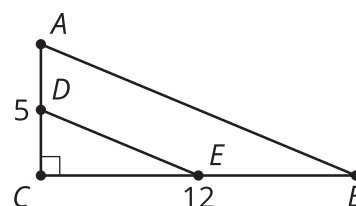
6. Lines BC and DE are both vertical. What is the length of BD ?



- A. 4.5
- B. 5
- C. 6
- D. 7.5

(From Unit 3, Lesson 12.)

7. In right triangle ABC , $AC = 5$ and $BC = 12$. A new triangle DEC is formed by connecting the midpoints of AC and BC .

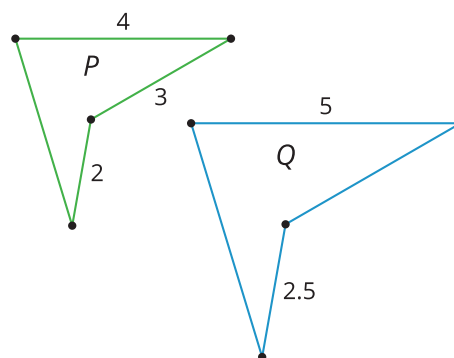


- a. What is the area of triangle ABC ?
- b. What is the area of triangle DEC ?
- c. Does the scale factor for the side lengths apply to the area as well?

(From Unit 3, Lesson 11.)

8. Quadrilaterals Q and P are similar.

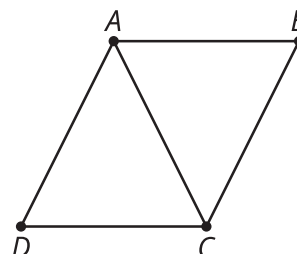
What is the scale factor of the dilation that takes Q to P ?



- A. $\frac{2}{5}$
- B. $\frac{3}{5}$
- C. $\frac{4}{5}$
- D. $\frac{5}{4}$

(From Unit 3, Lesson 6.)

9. Priya is trying to determine if triangle ADC is congruent to triangle CBA . She knows that segments AB and DC are congruent. She also knows that angles DCA and BAC are congruent. Does she have enough information to determine that the triangles are congruent? Explain your reasoning.



(From Unit 2, Lesson 6.)