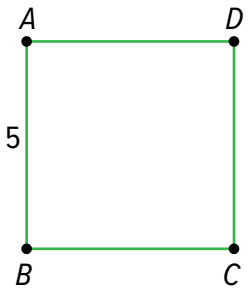
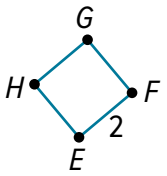
NAME _____ DATE _____ PERIOD _____

Practice

Connecting Similarity and Transformations

1. Find a sequence of rigid motions and dilations that takes square *ABCD* to square *EFGH*.

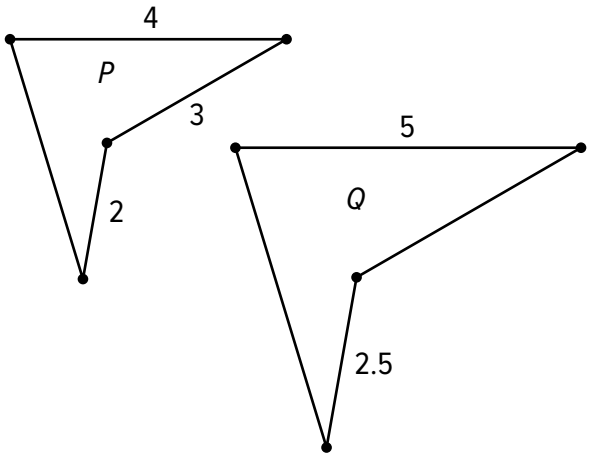




2. Quadrilaterals *Q* and *P* are similar.

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

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



3. What is our definition of similarity?

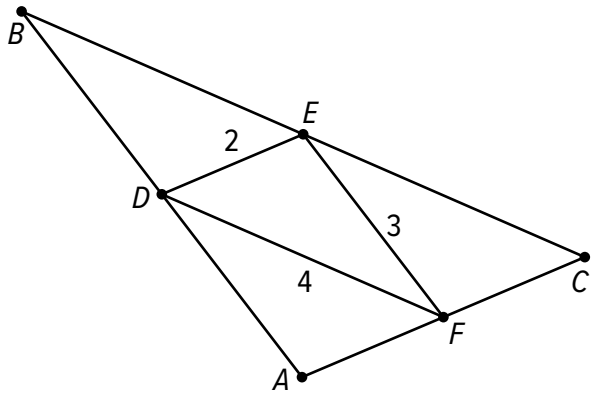
A. If 2 figures have the same angles, then they are similar.

B. If 2 figures have proportional side lengths, then they are similar.

C. If there is a sequence of rigid transformations taking one figure to another, then they are similar.

D. If there is a sequence of rigid transformations and dilations that take one figure to the other, then they are similar.

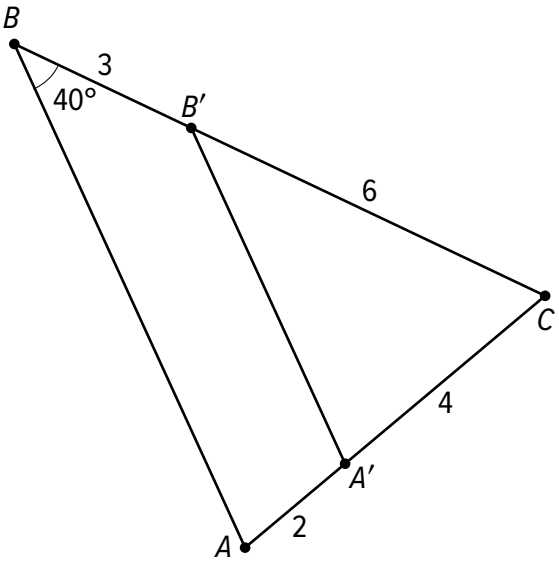
4. Triangle *DEF* is formed by connecting the midpoints of the sides of triangle *ABC*. The lengths of the sides of *DEF* are shown. What is the length of *BC*? **(Lesson 3-5)**



A. 3 units **C.** 6 units

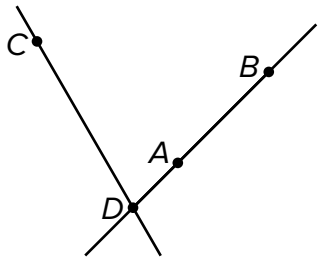
B. 4 units **D.** 8 units

5. If *AB* is 12, what is the length of *A′B′*? **(Lesson 3-5)**



6. Right angle *ABC* is taken by a dilation with center *P* and scale factor $\frac{1}{2}$ to angle *A′B′C′*. What is the measure of angle *A′B′C′*? **(Lesson 3-4)**

7. Respond to each question. **(Lesson 3-4)**



a. Dilate point *C* using center *D* and scale factor $\frac{3}{4}$.

b. Dilate segment *AB* using center *D* and scale factor $\frac{1}{2}$.

8. A polygon has perimeter 12. It is dilated with a scale factor of *k* and the resulting image has a perimeter of 8. What is the scale factor? **(Lesson 3-3)**

A. $\frac{1}{2}$ **C.** $\frac{3}{4}$

B. $\frac{2}{3}$ **D.** $\frac{4}{3}$

9. Select **all** the statements that *must* be true. **(Lesson 2-13)**

A. Parallelograms have four congruent sides.

B. Both sets of opposite sides of a parallelogram are parallel and congruent.

C. A trapezoid is a parallelogram.

D. Diagonals of a parallelogram bisect each other.

E. Diagonals of a parallelogram are congruent.