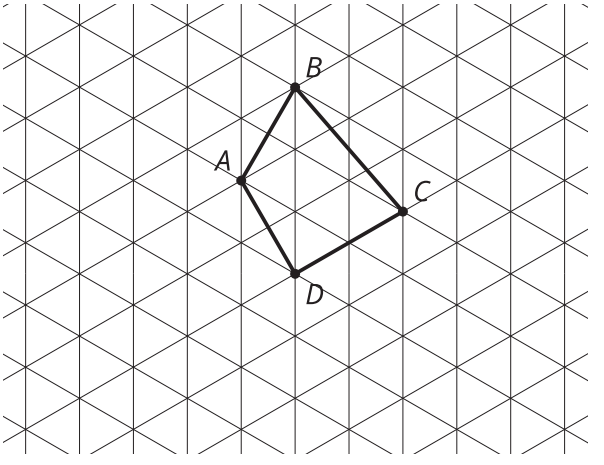
Lesson 14 Practice Problems

1. Draw the image of quadrilateral $ABCD$ when rotated 120° counterclockwise around the point D.



2. There is an equilateral triangle, ABC, inscribed in a circle with center D. What is the smallest angle you can rotate triangle ABC around D so that the image of A is B?

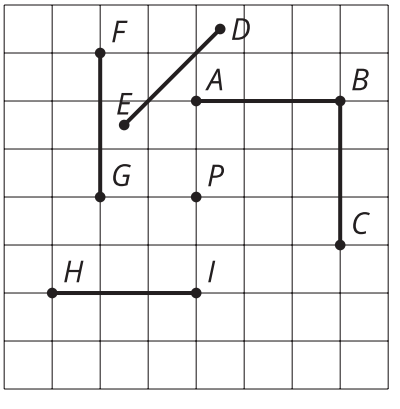
   A. 60°

   B. 90°

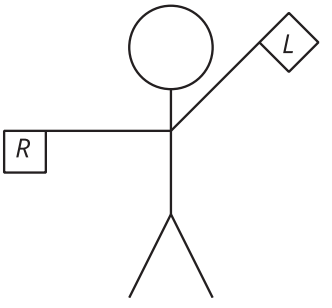
   C. 120°

   D. 180°

3. Which segment is the image of AB when rotated 90° counterclockwise around point P?



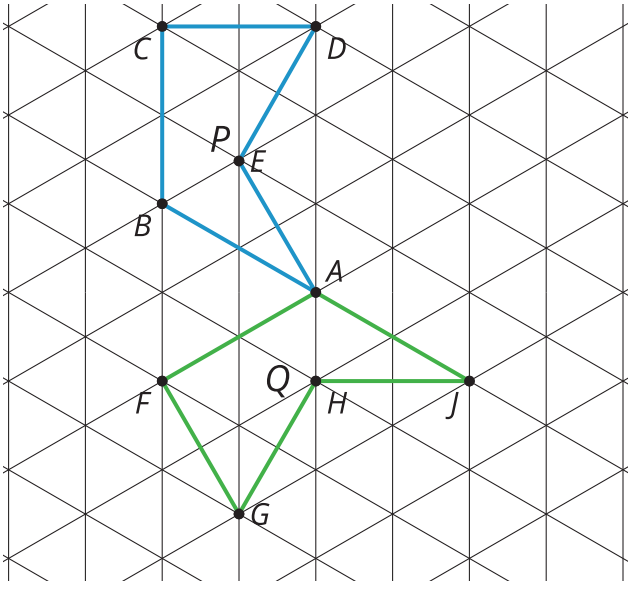
4. The semaphore alphabet is a way to use flags to signal messages. Here's how to signal the letter Q. Describe a transformation that would take the right hand flag to the left hand flag.



Q

(From Unit 1, Lesson 13.)

5. Here are 2 polygons:



Select **all** sequences of translations, rotations, and reflections below that would take polygon P to polygon Q.

A. Rotate 180° around point A.

B. Translate so that A is taken to J. Then reflect over line BA.

C. Rotate 60° counterclockwise around point A and then reflect over the line FA.

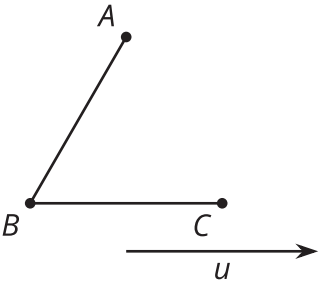
D. Reflect over the line BA and then rotate 60° counterclockwise around point A.

E. Reflect over line BA and then translate by directed line segment BA.

(From Unit 1, Lesson 13.)

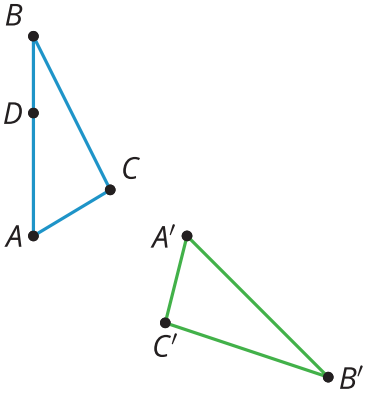
6. a. Draw the image of figure ABC when translated by directed line segment u. Label the image of A as A', the image of B as B', and the image of C as C'.

   b. Explain why the line containing AB is parallel to the line containing $A'B'$.



(From Unit 1, Lesson 12.)

7. There is a sequence of rigid transformations that takes A to A', B to B', and C to C'. The same sequence takes D to D'. Draw and label D':



(From Unit 1, Lesson 10.)