### Lesson 14 Practice Problems

1. Draw the image of quadrilateral $ABCD$ when rotated $120^{∘}$ counterclockwise around the point $D$.
* 
* ​​​​​​
1. 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 $B$?
	1. $60^{∘}$
	2. $90^{∘}$
	3. $120^{∘}$
	4. $180^{∘}$
2. Which segment is the image of $AB$ when rotated $90^{∘}$ counterclockwise around point $P$?
* 
1. 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.)
1. Here are 2 polygons:
* 
* Select **all** sequences of translations, rotations, and reflections below that would take polygon $P$ to polygon $Q$.
	1. Rotate $180^{∘}$ around point $A$.
	2. Translate so that $A$ is taken to $J$. Then reflect over line $BA$.
	3. Rotate $60^{∘}$ counterclockwise around point $A$ and then reflect over the line $FA$.
	4. Reflect over the line $BA$ and then rotate $60^{∘}$ counterclockwise around point $A$.
	5. Reflect over line $BA$ and then translate by directed line segment $BA$.
* (From Unit 1, Lesson 13.)
	1. 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 $C^{′}$.
	2. Explain why the line containing $AB$ is parallel to the line containing $A^{′}B^{′}$.
* 
* (From Unit 1, Lesson 12.)
1. 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.)



© CC BY 2019 by Illustrative Mathematics®