# **Team Problems for Chapter 8**

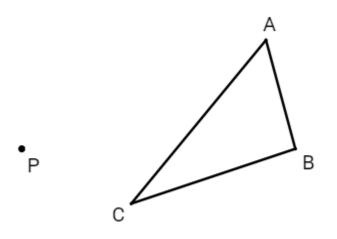
Date: \_\_\_\_\_

Name: \_\_\_\_\_

#### **Problem #1: Dilations**

You will need a ruler for this problem.

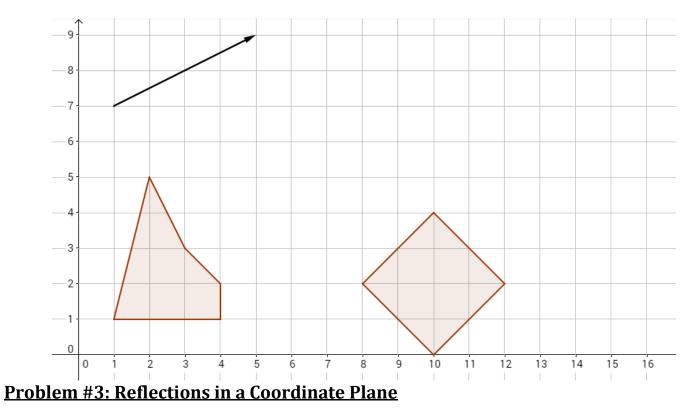
1. Follow the steps below to create a dilation image of  $\triangle ABC$  from the point *P*.



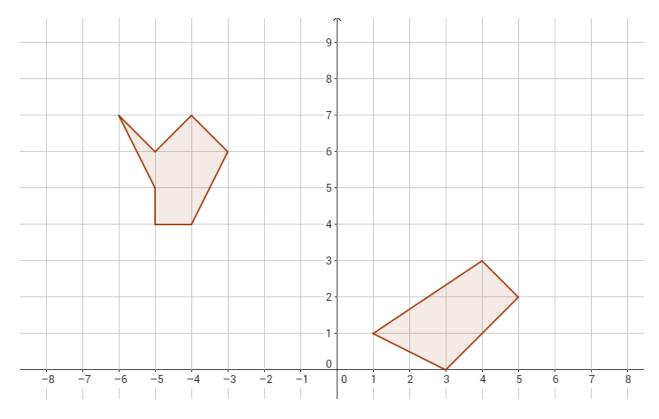
- a. Draw rays,  $\overrightarrow{PA}$ ,  $\overrightarrow{PB}$ ,  $\overrightarrow{PC}$ .
- b. Mark point A' on  $\overrightarrow{PA}$  such that A is between P and A' and PA = AA'.
- c. Mark point B' on  $\overrightarrow{PB}$  such that B is between P and B' and PB = BB'.
- d. Mark point C' on  $\overrightarrow{PC}$  such that C is between P and C' and PC = CC'.
- e. Draw  $\Delta A'B'C'$ .
- 2. How are the triangles  $\triangle ABC$  and  $\triangle A'B'C'$  related to each other?
- 3. What is the scale factor of the dilation?

### **Problem #2: Translations in a Coordinate Plane**

Draw the result of translating the shaded shapes in the next figure according to the direction and the distance given by the arrow. It may help you to consider the coordinates of the vertices of the shapes.

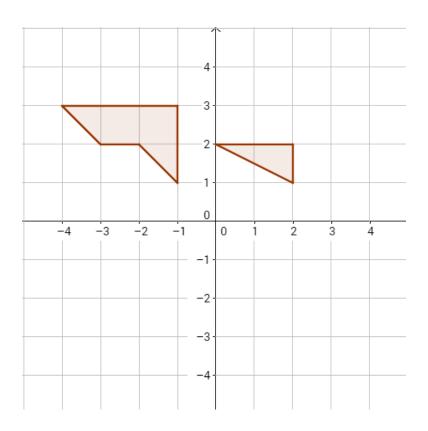


Draw the result of reflecting the shaded shapes in the next figure across the y-axis. It may help you to consider the coordinates of the vertices of the shapes.



### **Problem #4: Rotations in a Coordinate Plane**

Draw the result of rotating the shaded shapes in the next figure by 180° around the origin, where the *x*- and *y*-axes meet. It may help you to consider the coordinates of the vertices of the shapes.



# **Problem #5: Checking for Symmetry**

For the six figures below, determine how many lines of symmetry each has, and the degree of rotational symmetry each has.



Lines of Symmetry		
Degree of Rotational		
Symmetry		

	d.	e.	f.
Lines of Symmetry			
Degree of Rotational Symmetry			