

## Geometry Transformation WS

### Translations:

1. Plot three points A, B, and C and record the points below.

	X	Y
A		
B		
C		

2. Using the polygon button, connect points A, B, and C to create a triangle.
3. Plot a vector (using the vector button) that starts at a point and goes right 2/down 3.
4. Use the translate by vector button to translate triangle ABC then fill in the table below.

	X	Y
A'		
B'		
C'		

5. Measure the lengths of each side of the triangles (using the length button). How are the triangles related? Explain.

Clear your everything but the original triangle before starting the next transformation.

### Rotations:

1. Plot a point at (0,0).
2. Using the rotate button rotate the original triangle ABC counterclockwise 90 degrees about the origin. Write the new points in the table below.

	X	Y
A'		
B'		
C'		

3. How are the points in the pre-image and image related?

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- Next, rotate the newest rotation around the origin counterclockwise by 180 degrees.
- Write the new ordered pairs and then determine the relationship.

	X	Y
A''		
B''		
C''		

- Are all the triangles congruent? What would happen if you went clockwise instead of counterclockwise?

Clear your everything but the original triangle before starting the next transformation.

### **Reflections:**

- Draw a vertical line using the line button.
- Using the reflect about a line button, reflect your triangle and state the new points below. What is the relationship between the old points and new points?

	X	Y
A'		
B'		
C'		

- Next, plot a horizontal line.
- Using the same reflect button, reflect the triangle A'B'C' about the horizontal line and list the points below. What is the relationship?

	X	Y
A''		
B''		
C''		