Name: _____ Date: _____ Period: ____

You MUST follow these directions IN ORDER, if you expect to get a good grade.

1) Visit **WAMPLO.WEEBLY.COM** to get the links.

2) Click on the link EXPLORING TRANSLATIONS.

Label the coordinates of △*ABC*:

   A _____   *B* _____   *C* _____

Move the endpoint of vector *u* (point *E*) to (0, 0).

Then move point *E* show the translation: 5 units to the right and 4 units down.

Label the coordinates of △*A´B´C´*:

   A´ _____   *B´* _____   *C´* _____

How would you write this transformation algebraically?

$$(x,y) \rightarrow$$

Now change the vertices of △ABC to be the points listed in the table below.

Complete the table by changing the endpoint of vector u (point *E*) to (-4, 3)

PREIMAGE		IMAGE	
A	(1, 4)	*A´*	
B	(2, -1)	*B´*	
C	(4, 5)	*C´*	

How would you describe the translation in words?

How would you write this transformation algebraically?

$$(x,y) \rightarrow$$

3) Click on the link EXPLORING REFLECTIONS.

Label the coordinates of Polygon *ABCDE*:

A_____ B_____ C_____ D_____ E_____

Click the box next to Mirror line. WITHOUT touching the dots, CAREFULLY drag the line of reflection (dashed red line) so that it lies on top of the *y-axis*.

Predict where the coordinates of Polygon *A´B´C´D´E´* will be:

A´_____ B´_____ C´_____ D´_____ E´_____

Now click the Reflect! box to verify if your answers are correct.

Complete the table using your information from above:

PREIMAGE		IMAGE	
A		A´	
B		B´	
C		C´	
D		D´	
E		E´	

How would you describe, in words, the way the coordinates change after a reflection over the *y-axis*?

How would you write this transformation algebraically?

$(x,y) \rightarrow$

4) **Unclick the Reflect! box** and drag the entire Polygon *ABCDE* so that point A has the coordinates (-4,1)

Label the coordinates of Polygon *ABCDE*:

A_____   B_____   C_____   D_____   E_____

CAREFULLY drag the DOTS on the line of reflection (dashed red line) so that they both lie on top of the *x-axis*. Your dashed line should become the *x-axis.*

Predict where the coordinates of Polygon *A´B´C´D´E´* will be:

A´_____   B´_____   C´_____   D´_____   E´_____

Now click the Reflect! box to verify if your answers are correct.

Complete the table using your information from above:

PREIMAGE		IMAGE	
A		A´	
B		B´	
C		C´	
D		D´	
E		E´	

How would you describe, in words, the way the coordinates change after a reflection over the *x-axis*?

How would you write this transformation algebraically?

$$(x,y) \rightarrow$$

5) Click on the link <u>EXPLORING ROTATIONS</u>.

<p align="center">**SET THE SLIDER TO 0 !!!**</p>

In the left hand column, click the BLUE DOT next to the letters *B, C, C', D', E', F',* and *G'*.

Click the – sign in front of the word Number.
Click the – sign in front of the word Quadrilateral.
Click the – sign in front of the word Segment.

DOUBLE CLICK on Point *A* and change the coordinates to (0, 0). **Hit ENTER !**
DOUBLE CLICK on Points *D, E, F*, and *G* change them to the coordinates listed in the table below. **You MUST hit enter each time !!**

PREIMAGE		IMAGE	
D	(-1, 4)	D´	
E	(1, 5)	E´	
F	(4, 2)	F´	
G	(0, 2)	G´	

Predict where the coordinates of Quadrilateral *D´E´F´G´* will be after a 90° rotation around the origin, and complete the table.

Now move the slider to a = 90 to verify if your prediction is true. Use the list in the left column to verify the exact coordinates.

How would you describe, in words, the way the coordinates change after a 90° rotation around the origin?

How would you write this transformation algebraically?

$$(x,y) \rightarrow$$

6) **RESET THE SLIDER TO 0 !!**

Now predict where the coordinates of Quadrilateral $D\acute{E}\acute{F}\acute{G}\acute{}$ will be after a 180° rotation around the origin, and complete the table.

PREIMAGE		IMAGE	
D	(-1, 4)	D´	
E	(1, 5)	E´	
F	(4, 2)	F´	
G	(0, 2)	G´	

Now move the slider to a = 180 to verify if your prediction is true. Use the list in the left column to verify the exact coordinates.

How would you describe, in words, the way the coordinates change after a 180° rotation around the origin?

How would you write this transformation algebraically?

$$(x,y) \rightarrow$$