**ML #2 – Rotation (Transformations – math 7 Plus)**

**Vocabulary:** Rotation Quadrant Clockwise

 Counter-clockwise

**Part I: Quadrant Location**

**Y**



II

I

**X**

IV

IIII

**Part II: Rotating 90° Clockwise**

**A**

**B**

**C**

**B’**

**A’**

**C’**

**Y**

**EXAMPLE #1:**

**STEP 1**: The following is a **900 clockwise** rotation:

**STEP 2:** List the pre-image points and the image

points below.

**A(\_\_\_\_,\_\_\_\_) A’ (\_\_\_\_,\_\_\_\_)**

**X**

**B(\_\_\_\_,\_\_\_\_) B’ (\_\_\_\_,\_\_\_\_)**

**C(\_\_\_\_,\_\_\_\_) C’ (\_\_\_\_,\_\_\_\_)**

**In what quadrant is the**

**Pre-Image?\_\_\_\_\_\_ ; Image?\_\_\_\_\_\_**

Compare each set of PRE-IMAGE coordinates with the IMAGE coordinates. What is the relationship between the pre-image coordinates and the image coordinate?

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**E**

**EXAMPLE #2:**

**A**

**B**

**B’**

**A’**

**C’**

**Y**

**X**

**STEP 1**: The following is a **900 clockwise** rotation:

**STEP 2:** List the pre-image points and the image

points below.

**A(\_\_\_\_,\_\_\_\_) A’ (\_\_\_\_,\_\_\_\_)**

**B(\_\_\_\_,\_\_\_\_) B’ (\_\_\_\_,\_\_\_\_)**

**C**

**C(\_\_\_\_,\_\_\_\_) C’ (\_\_\_\_,\_\_\_\_)**

**In what quadrant is the**

**Pre-Image?\_\_\_\_\_\_ ; Image?\_\_\_\_\_\_**

Compare each set of PRE-IMAGE coordinates with the IMAGE coordinates. What is the relationship between the pre-image coordinates and the image coordinate?

Using the two examples above, describe what happens to the coordinates in a **900 clockwise** rotation?

Using the rule you have discovered for a 90˚ clockwise rotation, find the prime coordinates for a line with pre-image points at

(2, -6) (\_\_\_\_, \_\_\_\_)

 (7, -1) (\_\_\_\_,\_\_\_\_)

**Part III: Rotating 90° counter-clockwise**

**A**

**B**

**C**

**B’**

**A’**

**C’**

**X**

**Y**

**EXAMPLE #3:**

**STEP 1**: The following is a **900 counter-clockwise** rotation:

**STEP 2:** List the pre-image points and the image

points below.

**A(\_\_\_\_,\_\_\_\_) A’ (\_\_\_\_,\_\_\_\_)**

**B(\_\_\_\_,\_\_\_\_) B’ (\_\_\_\_,\_\_\_\_)**

**C(\_\_\_\_,\_\_\_\_) C’ (\_\_\_\_,\_\_\_\_)**

**In what quadrant is the**

**Pre-Image?\_\_\_\_\_\_ ; Image?\_\_\_\_\_\_**

* Compare each set of PRE-IMAGE coordinates with the IMAGE coordinates. What is the relationship between the pre-image coordinates and the image coordinate?

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**EXAMPLE #4:**

**A**

**B**

**C**

**B’**

**A’**

**C’**

**X**

**Y**

**STEP 1**: The following is **a 900 counter-clockwise** rotation:

**STEP 2:** List the pre-image points and the image

points below.

**A(\_\_\_\_,\_\_\_\_) A’ (\_\_\_\_,\_\_\_\_)**

**B(\_\_\_\_,\_\_\_\_) B’ (\_\_\_\_,\_\_\_\_)**

**C(\_\_\_\_,\_\_\_\_) C’ (\_\_\_\_,\_\_\_\_)**

**In what quadrant is the**

**Pre-Image?\_\_\_\_\_\_ ; Image?\_\_\_\_\_\_**

Compare each set of PRE-IMAGE coordinates with the IMAGE coordinates. What is the relationship between the pre-image coordinates and the image coordinate?

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

**Using the two examples above, describe what happens to the coordinates in**

**a 900 counter-clockwise rotation?**

* Using the rule you have discovered, find the prime coordinates for a line with pre-image points at (2, -6) (\_\_\_\_,\_\_\_\_)

 (7, -1) (\_\_\_\_,\_\_\_\_)

**Part IV: Rotating 180°**

**EXAMPLE #5:**

**A**

**B**

**C**

**B’**

**A’**

**C’**

**X**

**STEP 1**: The following is a **1800 rotation**:

**STEP 2:** List the pre-image points and the image

points below.

**A(\_\_\_\_,\_\_\_\_) A’ (\_\_\_\_,\_\_\_\_)**

**B(\_\_\_\_,\_\_\_\_) B’ (\_\_\_\_,\_\_\_\_)**

**C(\_\_\_\_,\_\_\_\_) C’ (\_\_\_\_,\_\_\_\_)**

* **In what quadrant is the**

**Pre-Image?\_\_\_\_\_\_ ; Image?\_\_\_\_\_\_**

Compare each set of PRE-IMAGE coordinates with the IMAGE coordinates. What is the relationship between the pre-image coordinates and the image coordinate?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**A**

**B**

**C**

**B’**

**A’**

**C’**

**X**

**Y**

**EXAMPLE #6:**

STEP 1: The following is a 1800 clockwise rotation:

**STEP 2:** List the pre-image points and the image

points below.

**A(\_\_\_\_,\_\_\_\_) A’ (\_\_\_\_,\_\_\_\_)**

**B(\_\_\_\_,\_\_\_\_) B’ (\_\_\_\_,\_\_\_\_)**

**C(\_\_\_\_,\_\_\_\_) C’ (\_\_\_\_,\_\_\_\_)**

**In what quadrant is the**

**Pre-Image?\_\_\_\_\_\_ ; Image?\_\_\_\_\_\_**

Compare each set of PRE-IMAGE coordinates with the IMAGE coordinates. What is the relationship between the pre-image coordinates and the image coordinate?

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**Using the two examples above, describe what happens to the coordinates in**

**a 1800 rotation?**

* Using the rule you have discovered, find the prime coordinates for a line with pre-image points at

(2, -6) (\_\_\_\_,\_\_\_\_) (7, -1) (\_\_\_\_,\_\_\_\_)