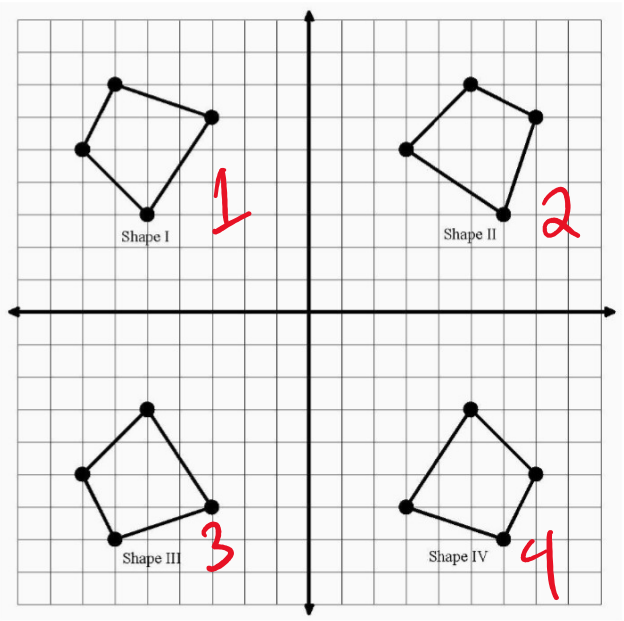
Math 2 Name _____ Period _____

Math 2 Honors: Unit 1 Review

Part I: Matching



Using the diagram above to match the Image/Pre-Image listed on the left with the transformation listed on the right.

C 1. Pre-image: Shape I
Image: Shape II

b 2. Pre-image: Shape II
Image: Shape III

e 3. Pre-image: Shape IV
Image: Shape II

a 4. Pre-image: Shape I
Image: Shape IV

d 5. Pre-image: Shape I
Image: Shape III

a. Rotated 180° around the point (0 , 0)

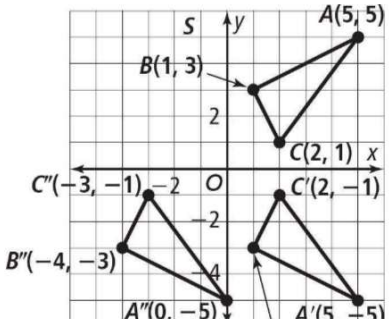
b. Reflected over the line $y = -1x + 0$

c. Rotated 270° counter-clockwise around the point (0 , 0)

d. Reflected over the line $y = 0$

e. Rotated 90° counter-clockwise around the point (0 , 0)

6. What composition would take ΔABC to $\Delta A''B''C''$? Describe in words and formal notation.



Reflect over X-axis

Translate left 5

$(T_{(-5,0)} \circ R_{(x\text{-axis})})\Delta ABC$

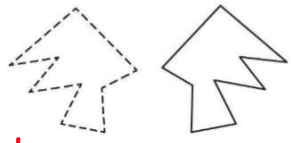
7. Using the rule (x, y) → (-y, x) find the image points:

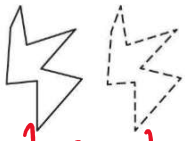
A(2, 3) B(-5, 6) C (-1, -3) A' (-3, 2) B' (-6, -5) C' (3, -1)

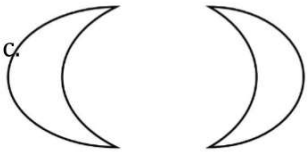
8. Using the rule (x, y) → (x, -y) find the image points:

A(2, 3) B(-5, 6) C (-1, -3) A' (2, -3) B' (-5, -6) C' (-1, 3)

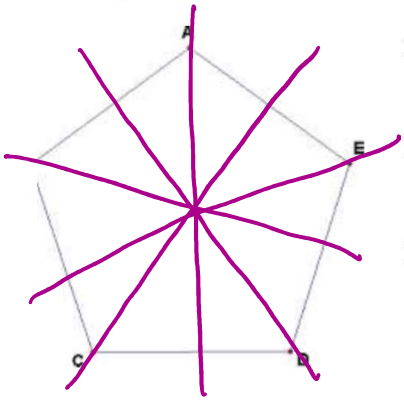
9. For a-c, What rigid motion maps the solid-line figure onto the dotted line figure?

a.  reflection

 translate

c.  reflection or rotation 180°

For questions 10- 12, use the figure below.



10. What is the name of the shape on the left?

pentagon

11. How many lines of symmetry are there on the shape to the left?

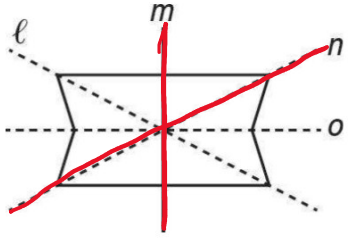
5

12. List **all** of the degrees of rotational symmetry for the shape to the left.

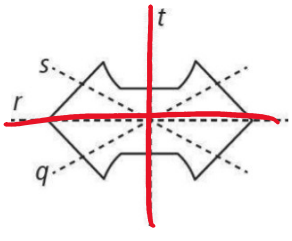
72°, 144°, 216°, 288°, 360°

13. For a-d: Do the following words have horizontal symmetry? (yes or no)		14. For a-d, Do the following capital letters have one or more lines of symmetry? (yes or no)	
a. ~~BOOK~~ yes	c. ~~POP~~ no	a. V yes	c. M yes
b. ~~CHECK~~ yes	d. ~~SUCCEED~~ no	b. N no	d. ~~O~~ I yes

15. For a-b, List all the lines of symmetry for the following shapes:

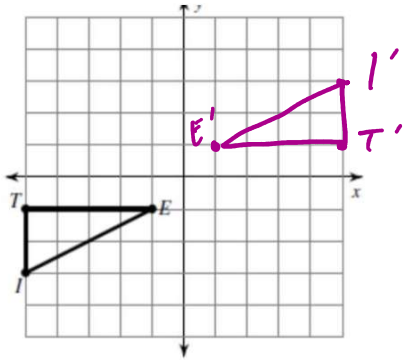
a. 

m, o

b. 

t, r

16. Transform the pre-image using the rule **(x,y) → (-x, -y)**
Draw and label the image on the graph)



a) Provide the coordinates for the pre-image and image.

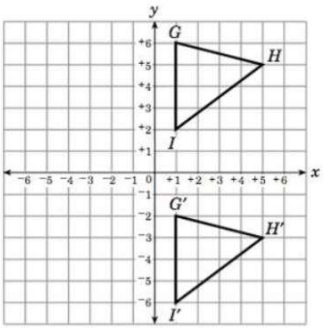
T (-5 , -1) I (-5 , -3) E (-1 , -1)

T' (5 , 1) I' (5 , 3) E'(1 , 1)

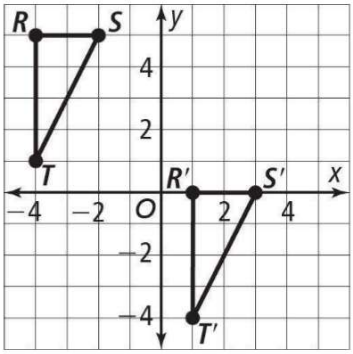
b) What transformation was performed? (Be specific!)

Rotation 180°

17. Describe the transformations that have occurred on the graphs below.



T (0,-8)



T (5,-5)

Use the graph to the side as needed to answer the following:

T (-6,-6)

18. Point $P'(-3, 2)$ is the image of point $P(3, 8)$ under a translation. What is the image of $B(0, -6)$ under the same translation?

B' (-6, -12)

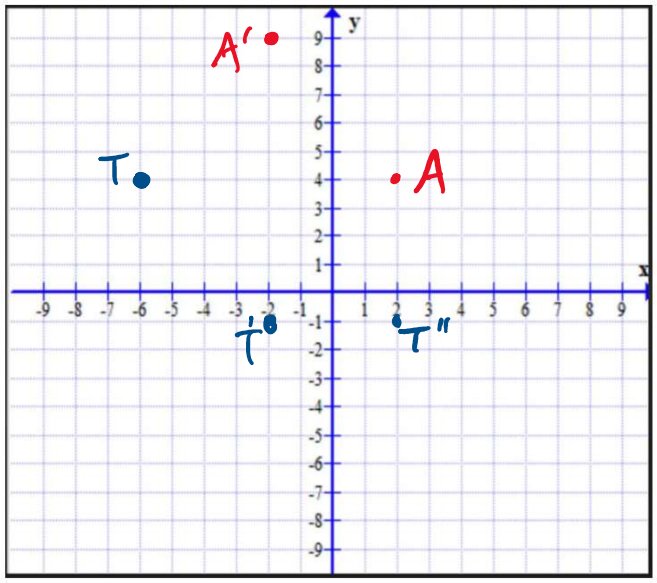
19. Point T is at $(-6, 4)$. What are the coordinates of point T" after $R_{y\text{-axis}} \circ T_{(4, -5)}$?

T'' (2, -1)

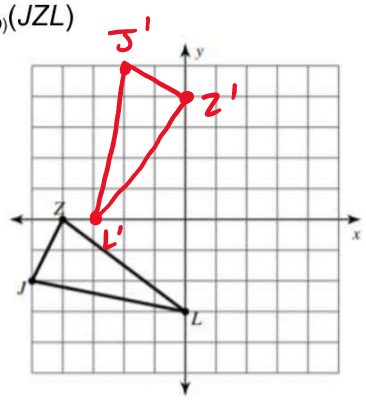
20. The rule $T_{(-4, 5)}$ is used for point A(2, 4).

What quadrant is the translated point in the coordinate system?

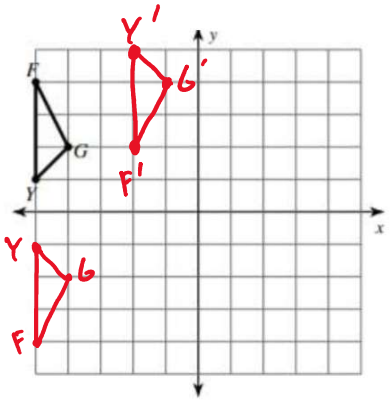
II



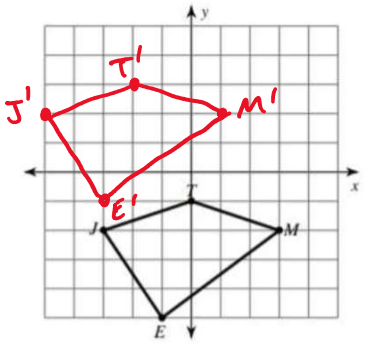
21. $r_{(270°, O)}(JZL)$



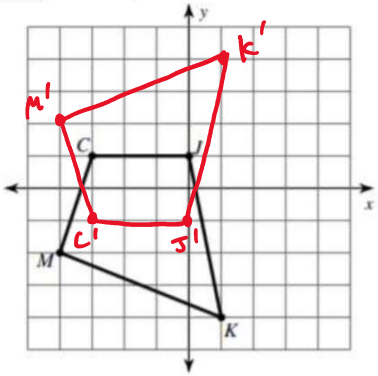
22. $(T_{(3, 6)} \circ R_{x\text{-axis}})(YFG)$



23. $T_{(-2, 4)}(JTME)$

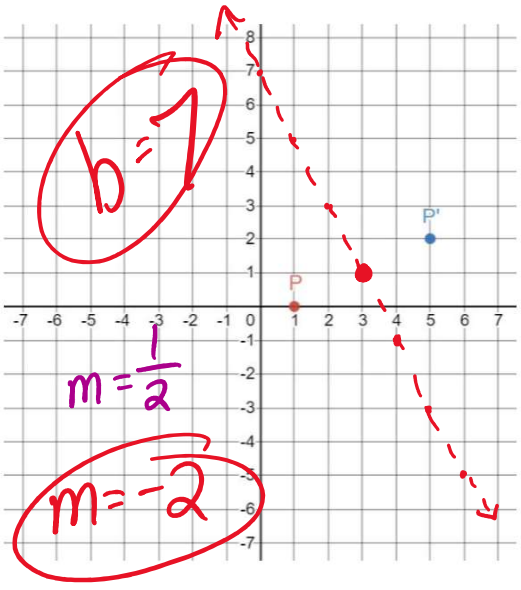


24. $R_{x\text{-axis}}(MCJK)$



25. Use the coordinate plane to the right.

a. Draw the line of reflection *clearly* between P and P' on the graph to the right



b. What is the equation of the line of symmetry?
(Write your equation in slope-intercept form)

y= $-2x+7$

$y = mx + b$