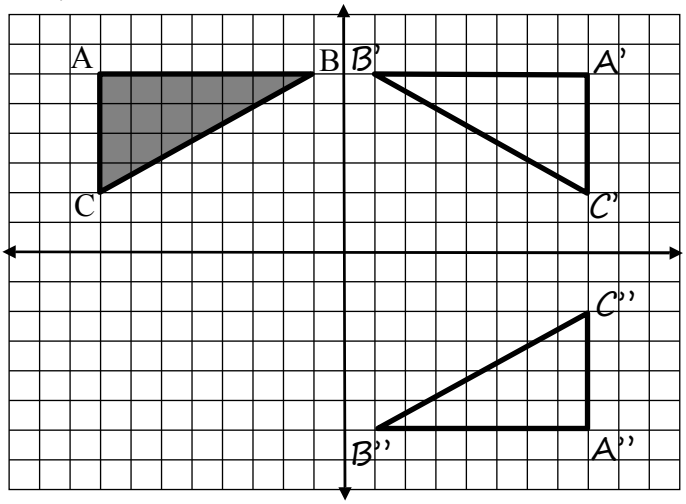
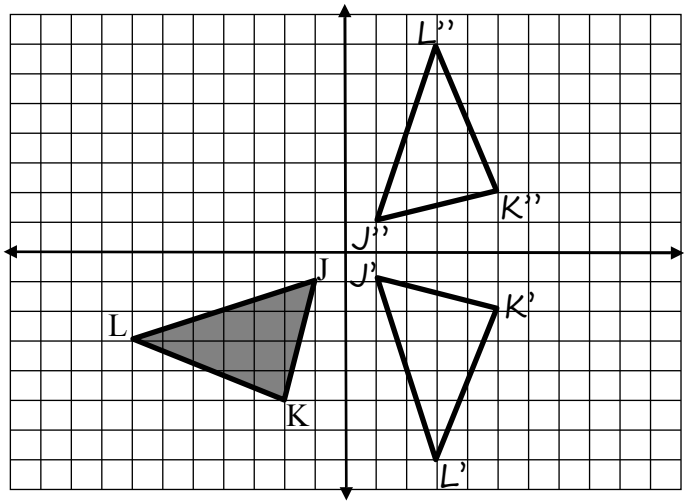
Name:_____ Date:_____ Period:_____ Score:_____

Directions: Perform the following transformation sequences. Plot each stage of the sequence. Use patty paper, geometry software, or any other method.

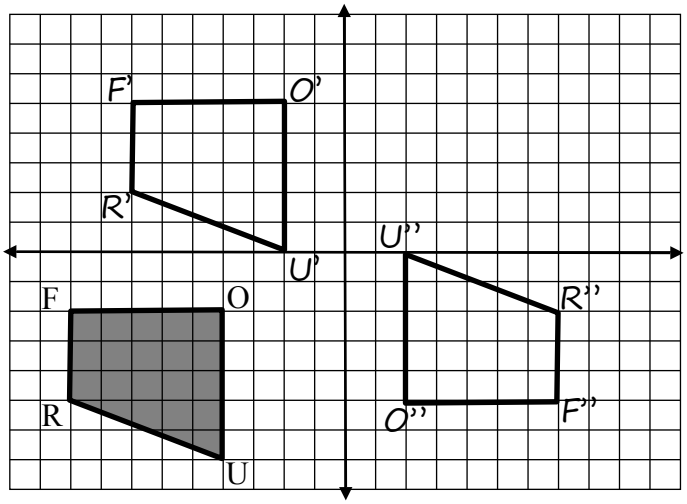
1. $R_{y\ axis} \circ R_{x\ axis}$



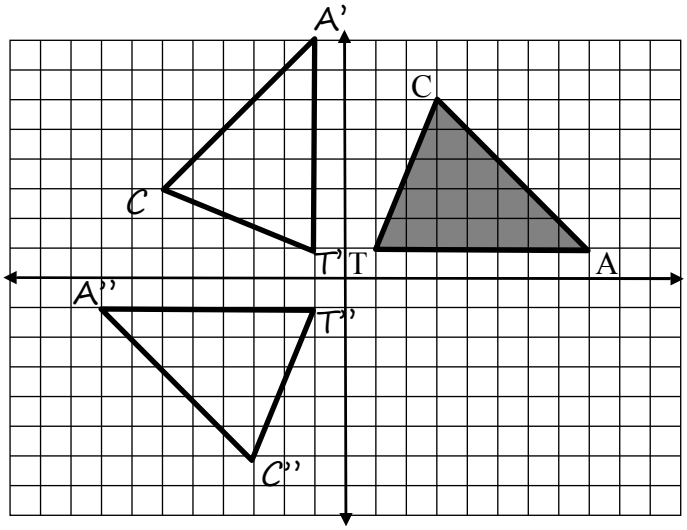
2. $R_{O,\ 90°} \circ R_{x\ axis}$



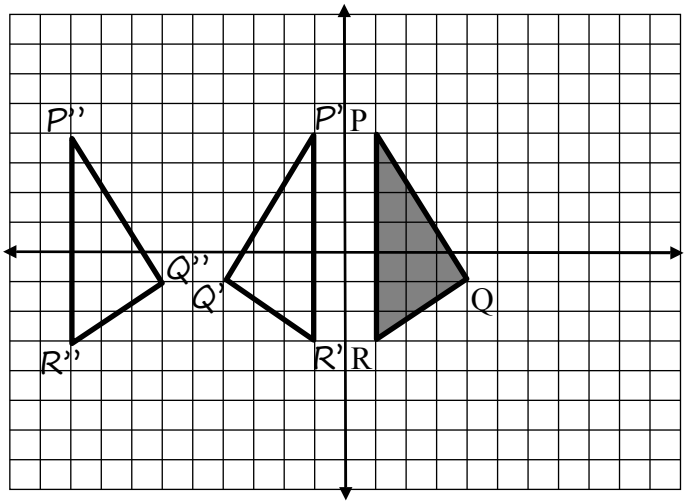
3. $T_{<2,\ 6>} \circ R_{O,\ 180°}$



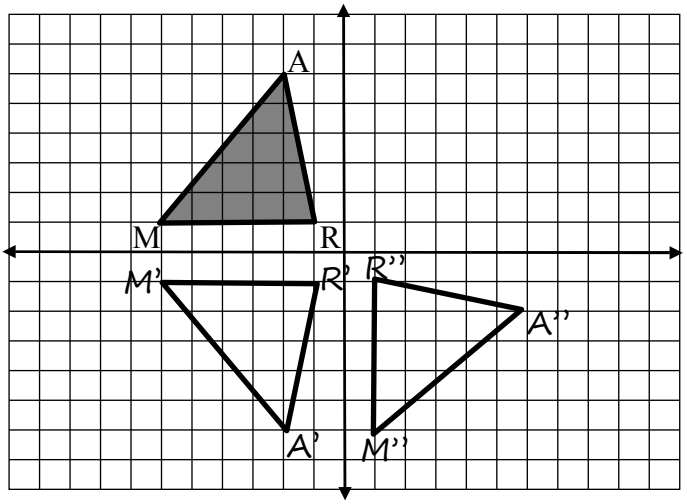
4. $R_{O,\ 90°} \circ R_{O,\ 90°}$



4. $R_{y\ axis} \circ R_{x=-5}$



4. $R_{x\ axis} \circ R_{O,\ 90°}$



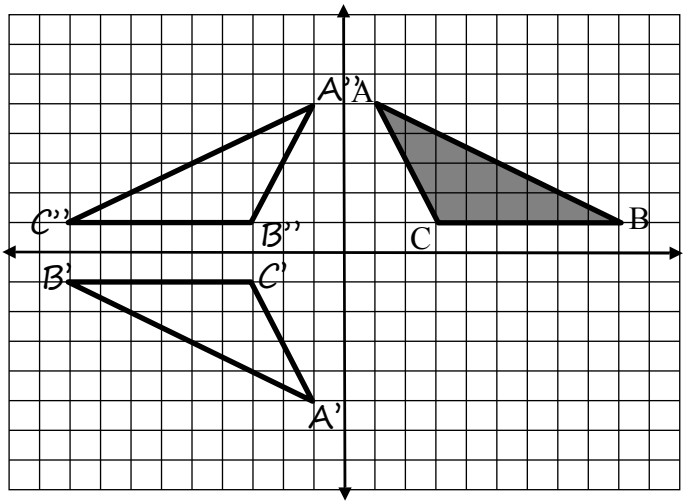
Name:_____ Date:_____ Period:_____ Score:_____

Directions: Perform the following transformation sequences. Plot each stage of the sequence. Use patty paper, geometry software, or any other method, and answer the questions .

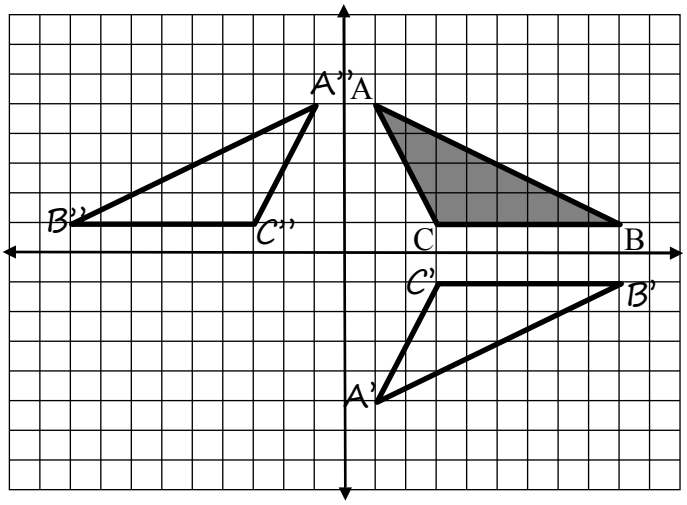
1. What do you think? Does the order in which you perform a transformation sequence effect the final image? Explain your reasoning.

Answers Vary

2a. $R_{O,\ 180°} \circ R_{x\ axis}$



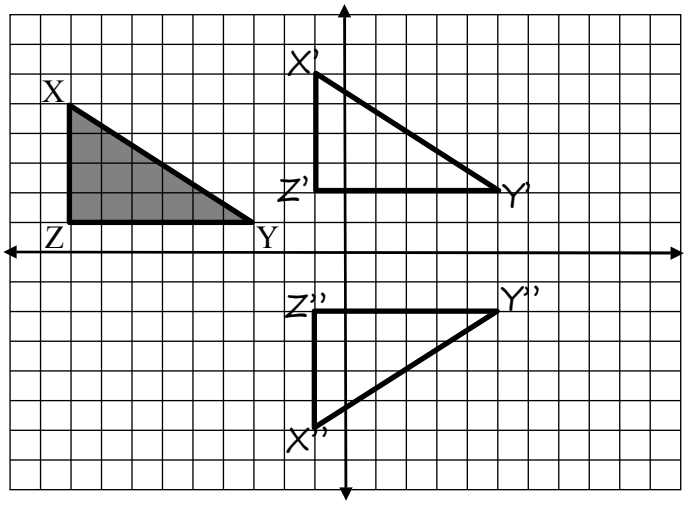
2b. $R_{x\ axis} \circ R_{O,\ 180°}$



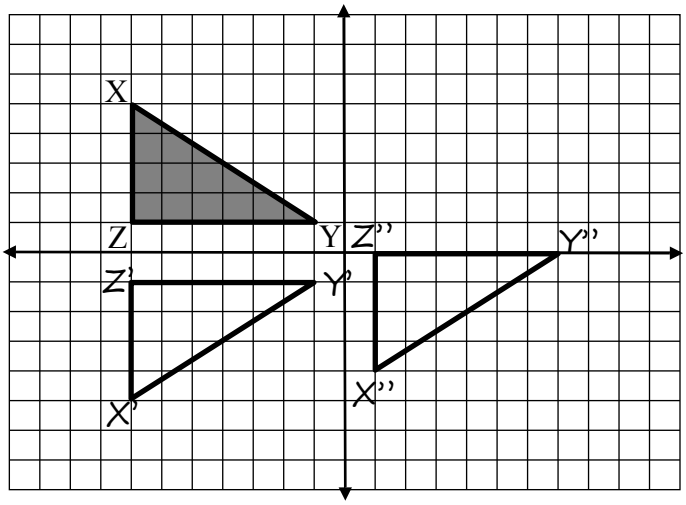
2c. Did performing the same transformation sequence in the reverse order change the position of the final image? Why?

No, because A'' B'' C'' ended up in the same exact location in both sequences. (answers vary)

3a. $T_{<8,1>} \circ R_{x\ axis}$



3a. $R_{x\ axis} \circ T_{<8,1>}$



2c. Did performing the transformation in the reverse order change the position of the final image? Why?

Yes, because X'' Y'' Z'' ended up in different locations as a result of the translation. (answers vary)

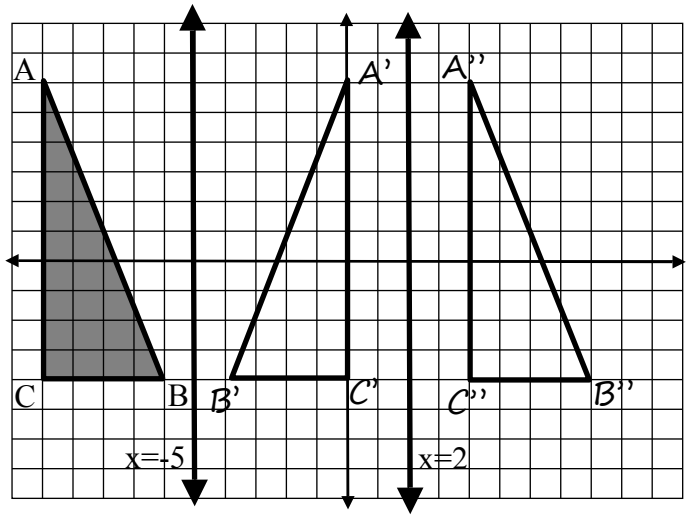
Name:_____ Date:_____ Period:_____ Score:_____

Directions: Perform the following transformation sequences. Plot each stage of the sequence. Use patty paper, geometry software, or any other method, and answer the questions .

1. What do you think will happen if you reflect a figure twice over two parallel lines?

Answers vary, but some students may be able to visualize that the final image will end up being a translation of the pre-image.

2a. $R_{x=-5} \circ R_{x=2}$



2b. What kind of transformation is the result from ABC to A"B"C" ?

Translation

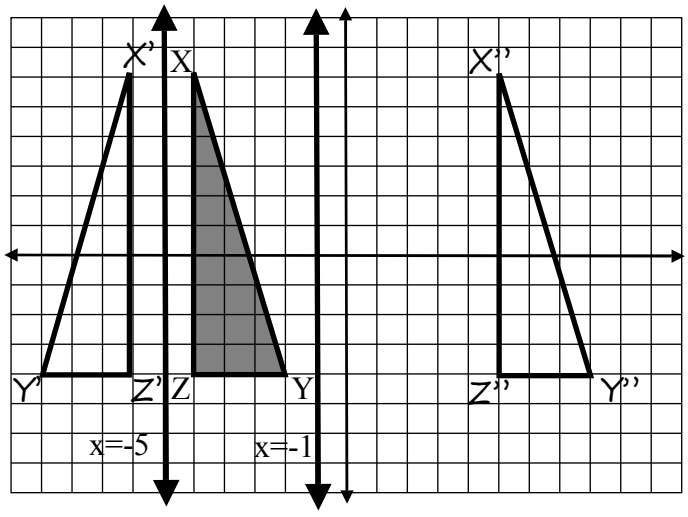
2c. Describe the transformation. What is the distance between A and A"?

ABC was translated 14 units, so the distance between A and A'' is 14 units.

2d. What is the relationship between the distance of the transformation and the distance between the parallel lines?

ABC was translated 14 units and it is 7 units between the parallel lines so the translation was ***double the distance*** *between the parallel lines..*

3a. $R_{x=-5} \circ R_{x=-1}$



3b. What kind of transformation is the result from XYZ to X"Y"Z" ?

Translation

3c. Describe the transformation. What is the distance between X and X"?

ABC was translated 10 units, so the distance between X and X'' is 14 units.

3d. What is the relationship between the distance of the transformation and the distance between the parallel lines?

ABC was translated 10 units and it is 5 units between the parallel lines so the translation was ***double the distance*** *between the parallel lines.*

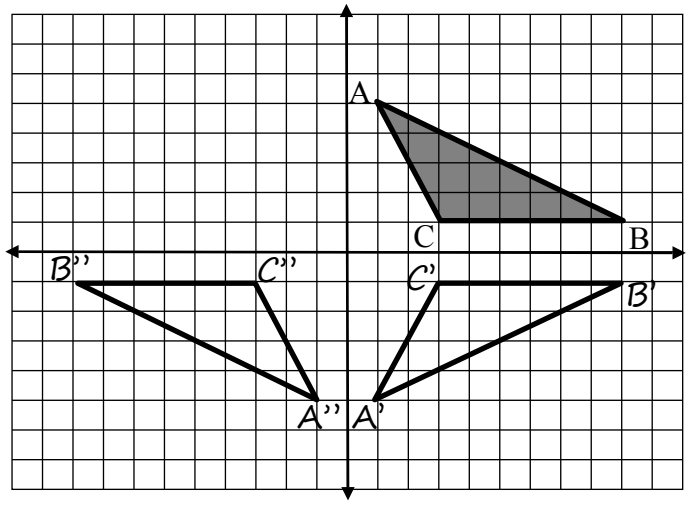
Name:_____ Date:_____ Period:_____ Score:_____

Directions: Perform the following transformation sequences. Plot each stage of the sequence. Use patty paper, geometry software, or any other method, and answer the questions .

1. What do think will happen if you reflect a figure twice over two intersecting lines?

*Answers vary, but some students **may** be able to visualize that the final image will end up being a rotation double the angle of the intersection of the lines.*

2a. $R_{x\ axis} \circ R_{y\ axis}$



2b. What kind of transformation is the result from ABC to A"B"C" ?

Rotation 180 degrees about the origin

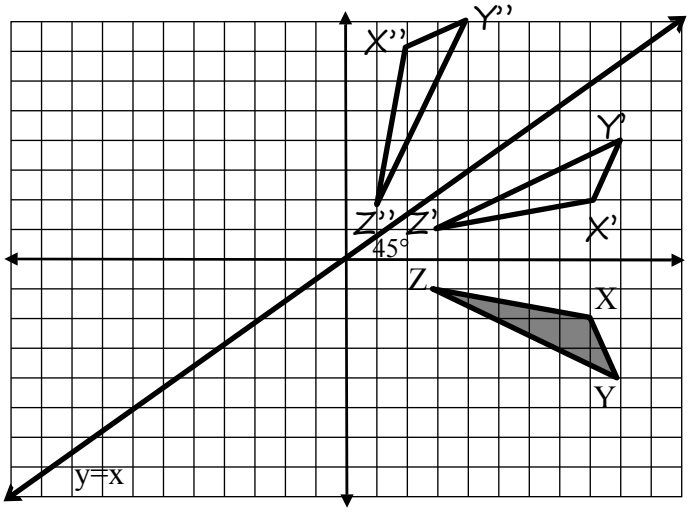
2c. How did you know what kind of transformation it was?

Answers vary

2d. What is the relationship between the angle that the two axis intersect and the transformation?

The angle of intersection is 90° and the rotation was 180° so the resulting rotation is double the measure of the angle of intersection between the two lines.

3a. $R_{x\ axis} \circ R_{y=x}$



3b. What kind of transformation is the result from XYZ to X"Y"Z" ?

Rotation

3c. How did you know what kind of transformation it was?

Answers vary

3d. What is the relationship between the angle that the two axis intersect and the transformation?

XYZ was rotated 90° and the angle of intersection is 45° so the resulting rotation is double the measure of the angle of intersection.