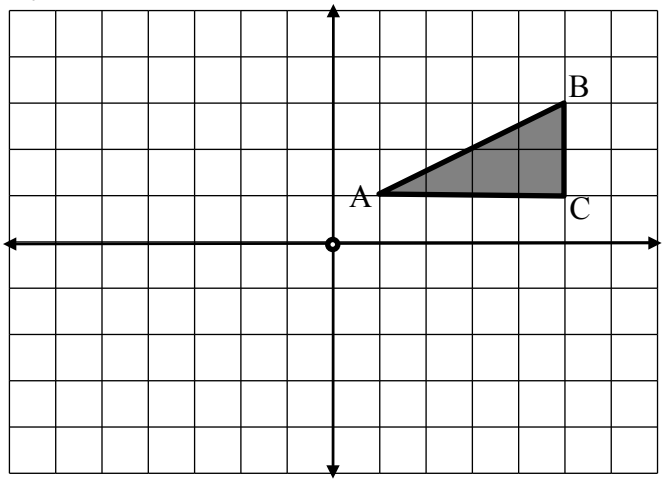
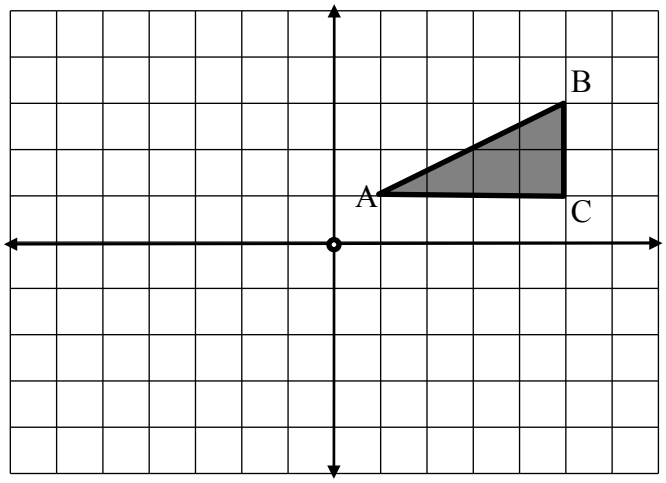
Name:_____ Date:_____ Period:_____ Score:_____

Directions: Use patty paper, Geometry software, or any other method available to you to rotate each figure as directed. Make sure to label your new figure.

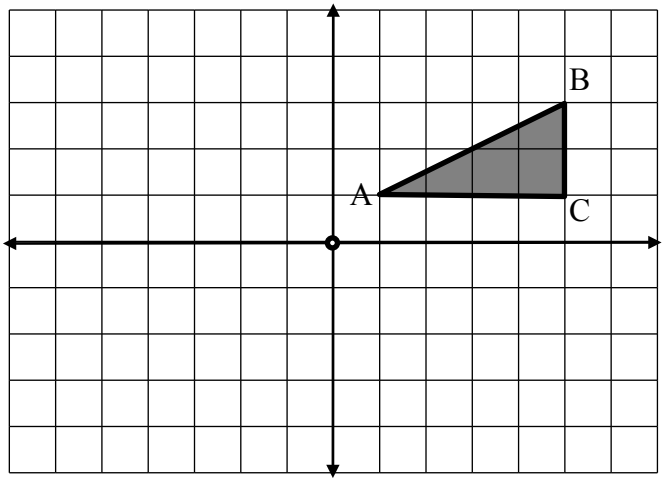
1. Rotate ABC 90° clockwise about the origin. $R_{O,-90°}$



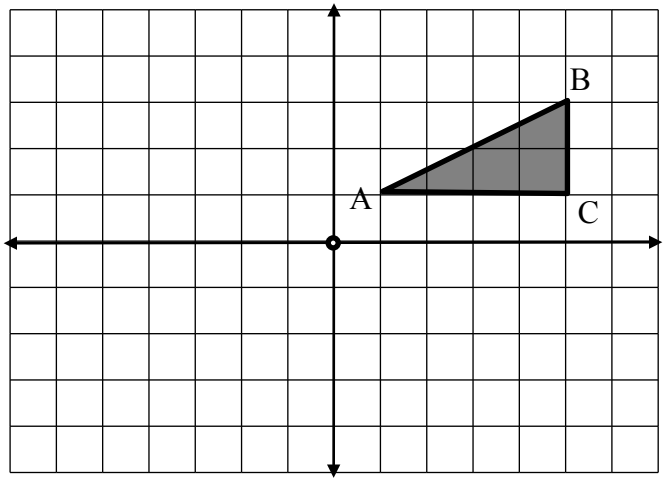
2. Rotate ABC 90° counter-clockwise about the origin. $R_{O,90°}$



3. Rotate ABC 180° clockwise about the origin. $R_{O,-180°}$



4. Rotate ABC 180° counter-clockwise about the origin. $R_{O,180°}$



5a. What do you think happens to the center point of rotation? Does it move?

b. What do think… is each points in image the same distance from the center as in the original figure? Why?

6. Is a rotation an isometric transformation?

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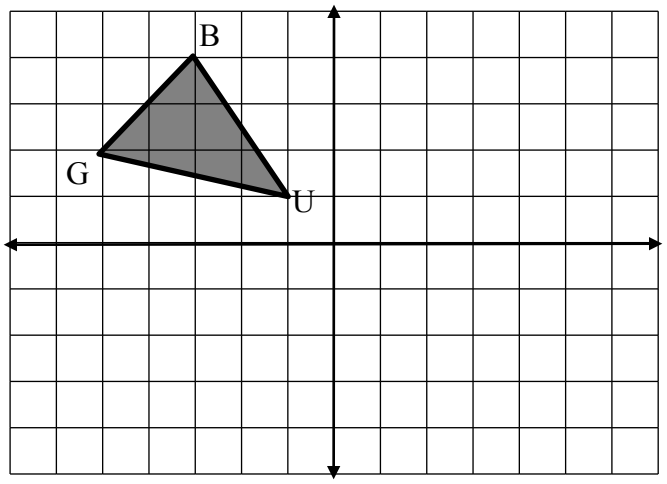
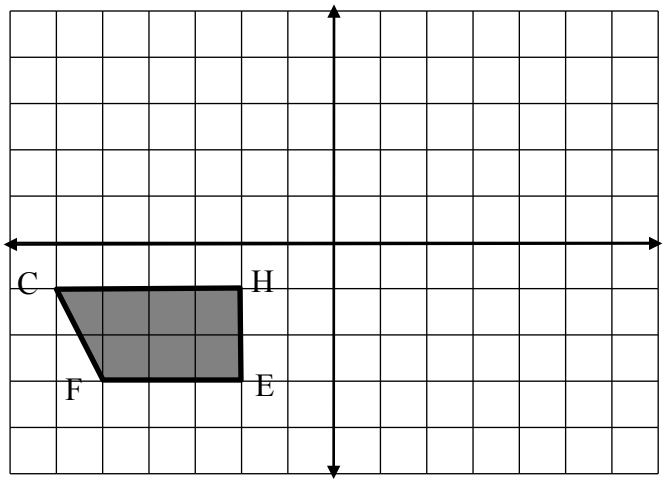
Name:_____ Date:_____ Period:_____ Score:_____

Directions: Use patty paper, Geometry software, or any other method to rotate each figure as directed. Make sure to label your image figure correctly.

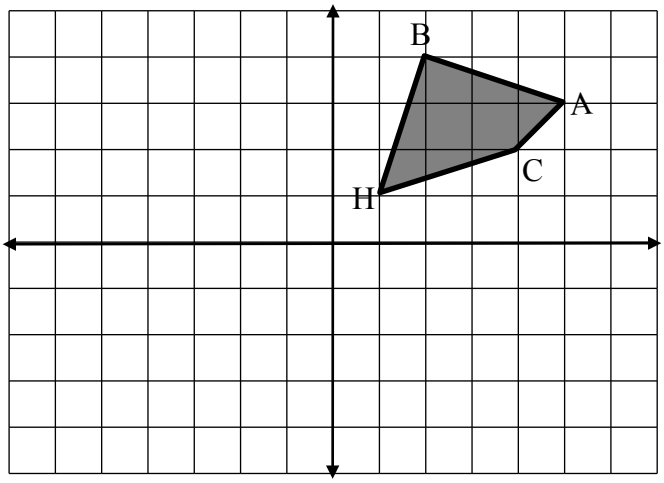
1. Rotate BUG 180° clockwise about the origin. $R_{O,-180°}$



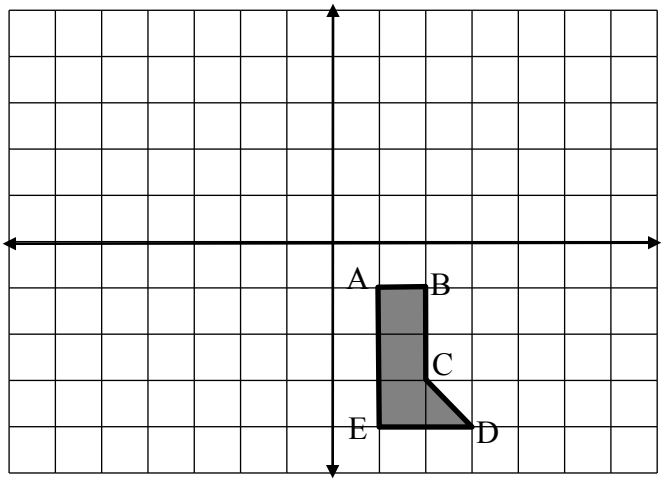
2. Rotate CHEF 180° counter-clockwise about the origin. $R_{O,180°}$



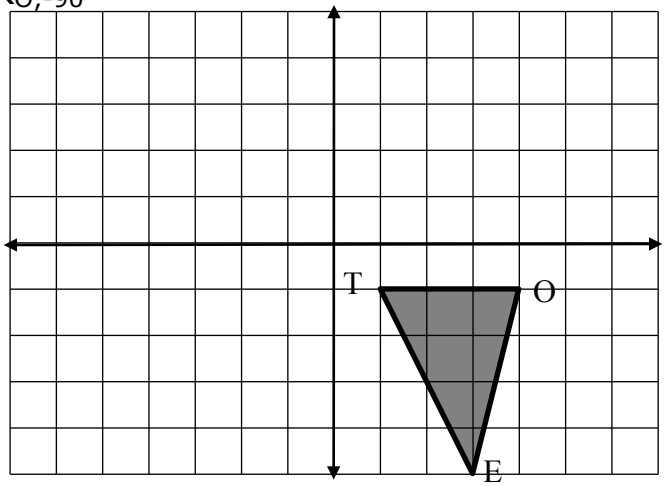
3. Rotate BACH 90° clockwise about the origin. $R_{O,-90°}$



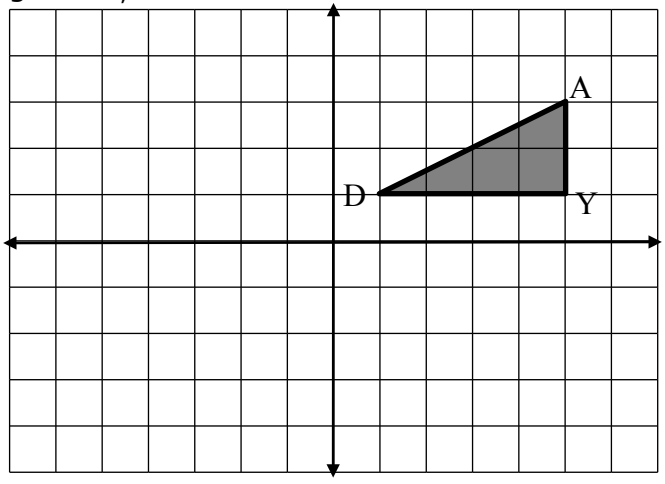
4. Rotate ABCDE 90° counter clockwise about the origin. $R_{O,90°}$



5. Rotate TOE 90° clockwise about the origin. $R_{O,-90°}$



6 Rotate DAY 90° counter- clockwise about the origin. $R_{O,90°}$



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

Directions: Refer to some of the problems on the previous page to help you make conjectures about the functions of rotations about the origin.

7. For problem 1 (180° rotation clockwise)…

What are the coordinates of the vertices of the original figure?

B (___,___) U (___,___) G (___,___)

What are the coordinates in its image?

B′ (___,___) U′ (___,___) G′ (___,___)

Describe the relationship between the original an image coordinates in words.

Describe the relationship with a function.

$(x,y) \rightarrow$ (_____, _____)

8. For problem 5 (90° rotation clockwise)…

What are the coordinates of the vertices of the original figure?

T (___,___) O (___,___) E (___,___)

What are the coordinates in its image?

T′ (___,___) O′ (___,___) E′ (___,___)

Describe the relationship between the original an image coordinates in words.

Describe the relationship with a function.

$(x,y) \rightarrow$ (_____, _____)

9. For problem 5 (90° rotation counter clockwise)…

What are the coordinates of the vertices of the original figure?

D (___,___) A (___,___) Y (___,___)

What are the coordinates in its image?

D′ (___,___) A′ (___,___) Y′ (___,___)

Describe the relationship between the original an image coordinates in words.

Describe the relationship with a function.

$(x,y) \rightarrow$ (_____, _____)

10. Bill says if you rotate a figure 180 clockwise or counterclockwise you will get the same image. Sally says you won't. Who is correct? Why?

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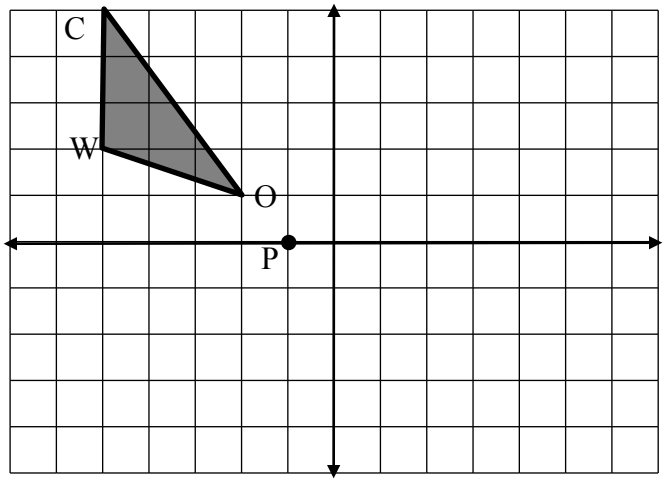
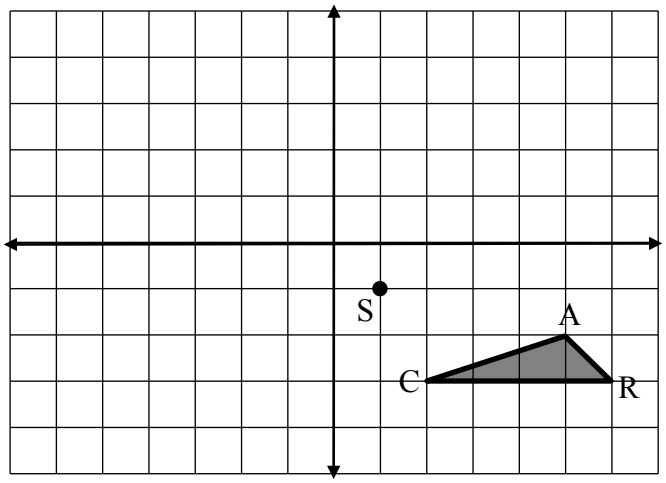
Name:_____ Date:_____ Period:_____ Score:_____

Directions: We can also rotate figures around other points. Use patty paper, Geometry software, or any other method to rotate each figure as directed. Make sure to label figure.

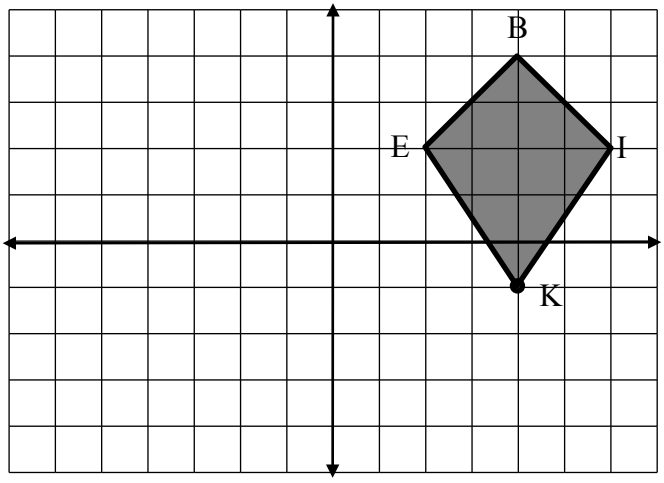
1. Rotate COW 180° clockwise about point P. $R_{p,-180°}$



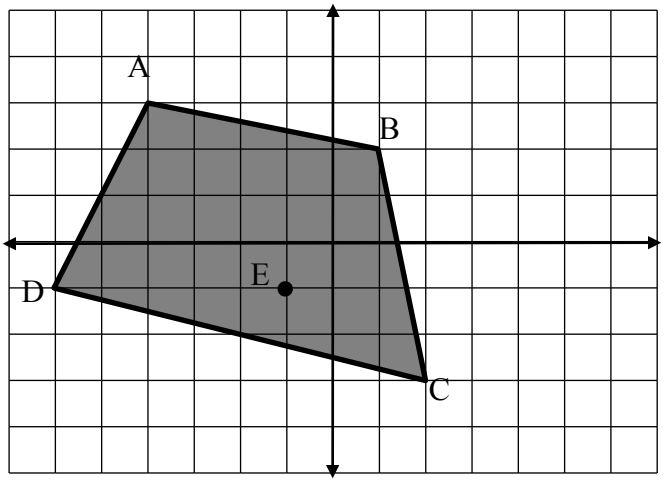
2. Rotate CAR 90° counter-clockwise about point S. $R_{S,90°}$



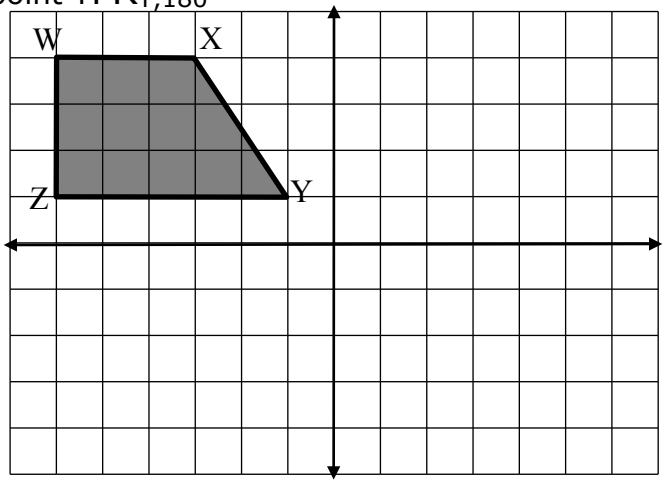
3. Rotate BIKE 90° counter-clockwise about the point K. $R_{K,90°}$



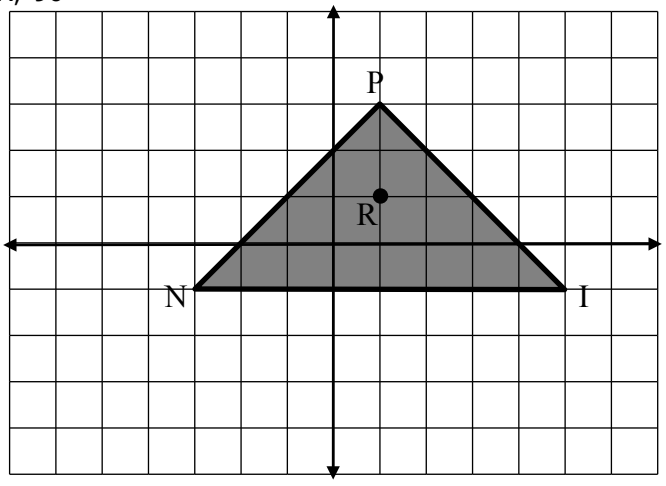
4. Rotate ABC 90° clockwise about point E. $R_{E,-90°}$



5. Rotate ABC 180° counter-clockwise about point Y. $R_{Y,180°}$



6. Rotate PIN 90° clockwise about point R. $R_{R,-90°}$



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