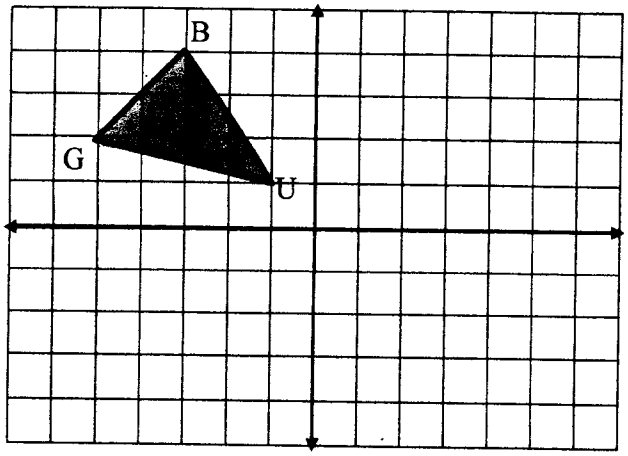
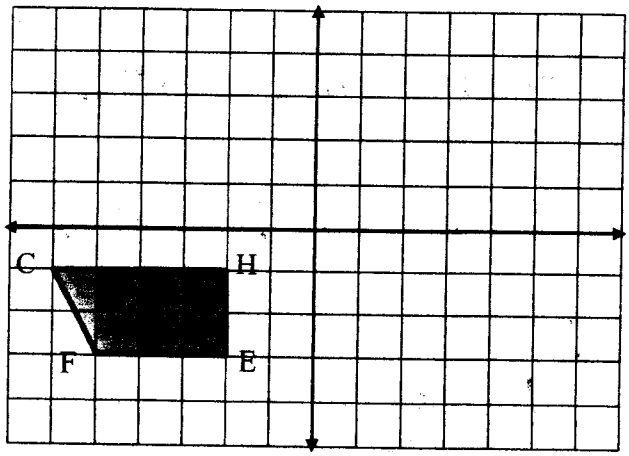
Name:_____ Date:_____ Period:_____ Score:_____

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

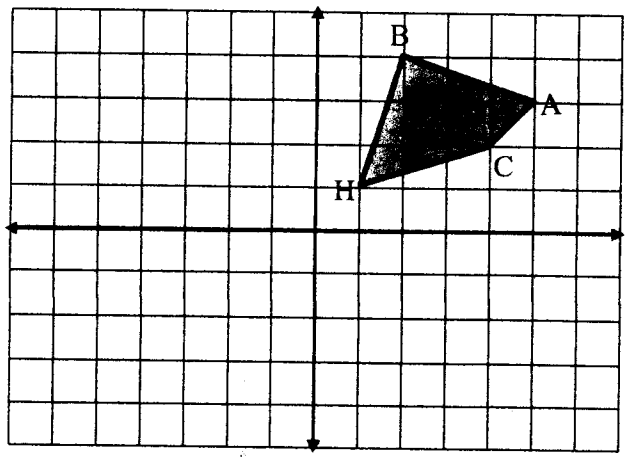
1. Rotate BUG 180° clockwise about the origin. $R_{O,-180°}$



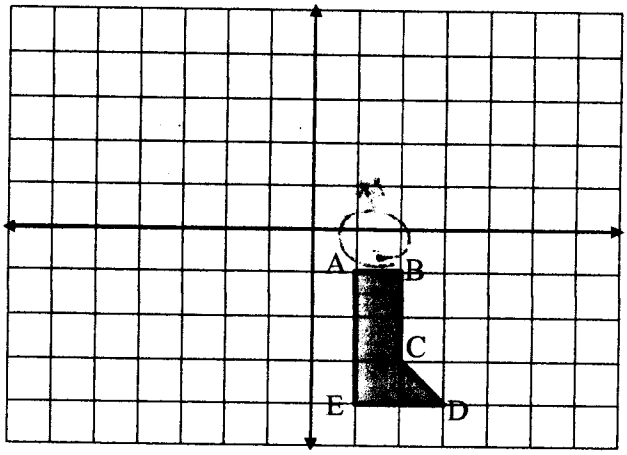
2. Rotate CHEF 180° counter-clockwise about the origin. $R_{O,180°}$



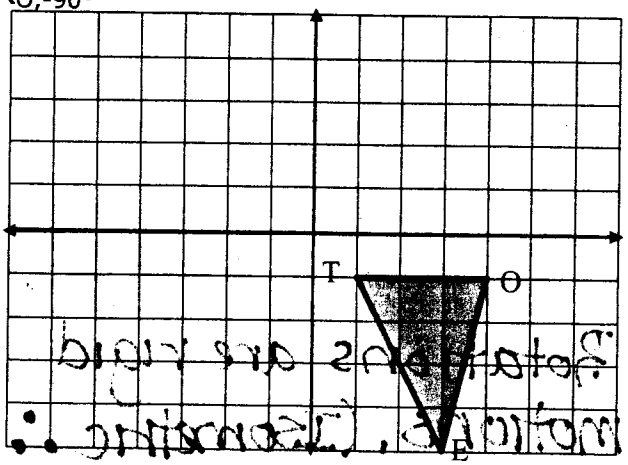
3. Rotate BACH 90° clockwise about the origin. $R_{O,-90°}$



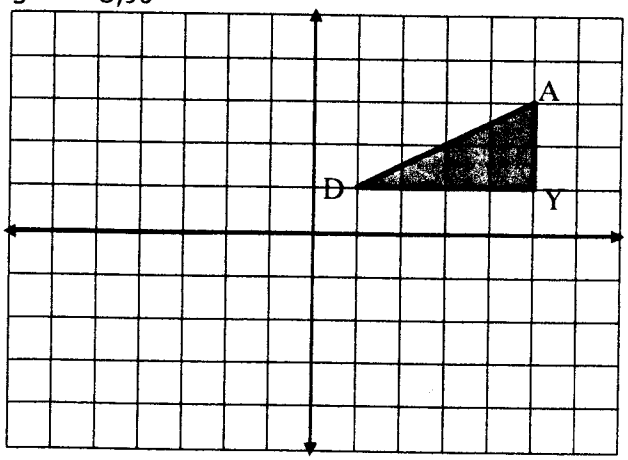
4. Rotate ABCDE 90° counter clockwise about the origin. $R_{O,90°}$



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



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



Notes

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?

Preimage B (-3, 4) U (-1, 1) G (-5, 2)

What are the coordinates in its image?

Image B′ (3, -4) U′ (1, -1) G′ (5, -2)

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

Numbers are the same/the signs are opposite

Describe the relationship with a function.

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

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 6 (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?

As long as you rotate 180°, you will get the same image.

Bill is correct!

Rotations are rigid motions. (Isometric ∴ ≅)

Per 1 Per 4, Per 2

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) → (_____, _____)

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) → (_____, _____)

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.

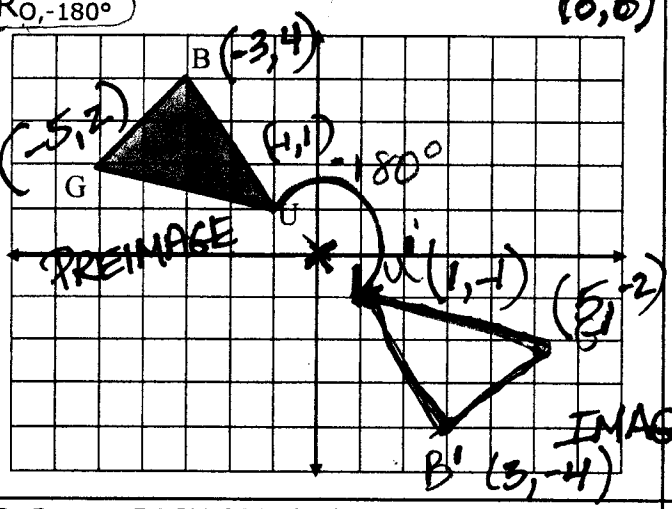
(x,y) → (_____, _____)

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?

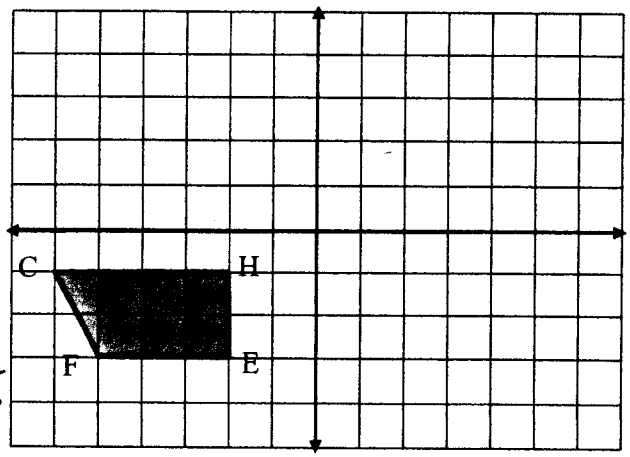
Name:_____ Date:_____ Period:_____ Score:_____

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

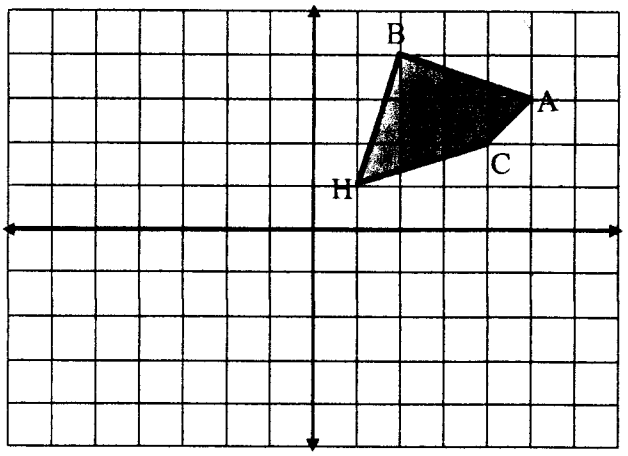
1. Rotate BUG 180° clockwise about the origin. $R_{O,-180°}$



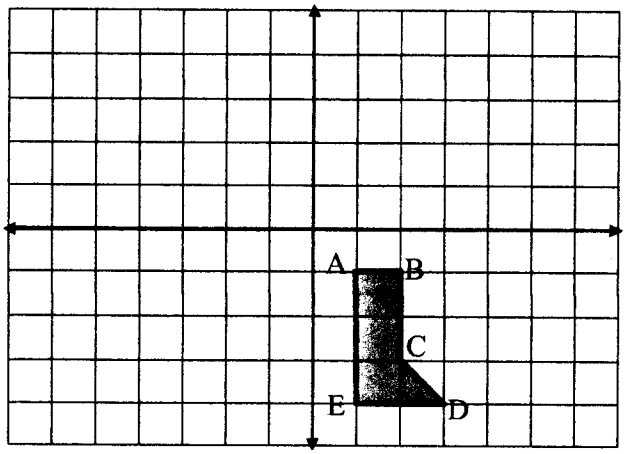
2. Rotate CHEF 180° counter-clockwise about the origin. $R_{O,180°}$



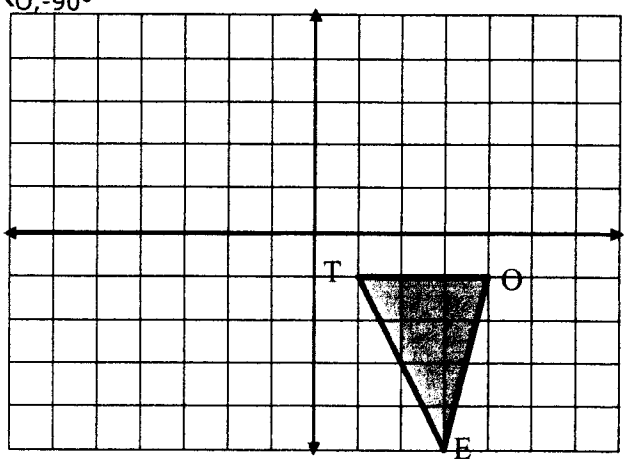
3. Rotate BACH 90° clockwise about the origin. $R_{O,-90°}$



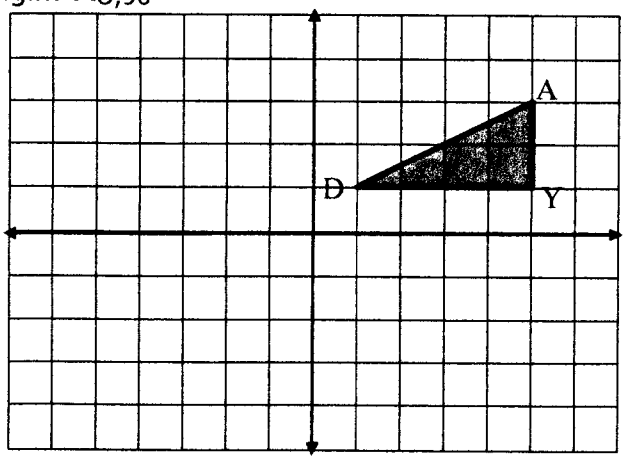
4. Rotate ABCDE 90° counter clockwise about the origin. $R_{O,90°}$



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



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



Per 1, Per 2, Per 4