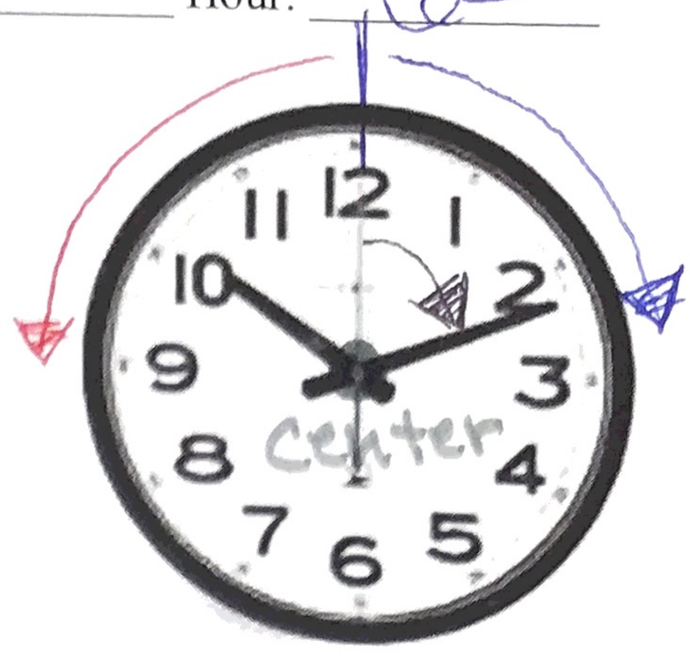
Name: _____ Date: Feb 14 Hour: 6th

Unit 6A: Day 7 and 8: Properties of Rotations

Focus Question: How do I create rotations?

A. The Directions and Degrees of Rotations

Look at the clock at the right. The hands of the clock rotate during the day. This means that they spin or turn.



The direction that the hands turn is called clockwise

If the hands were to turn the opposite direction, this would be called counter-clockwise

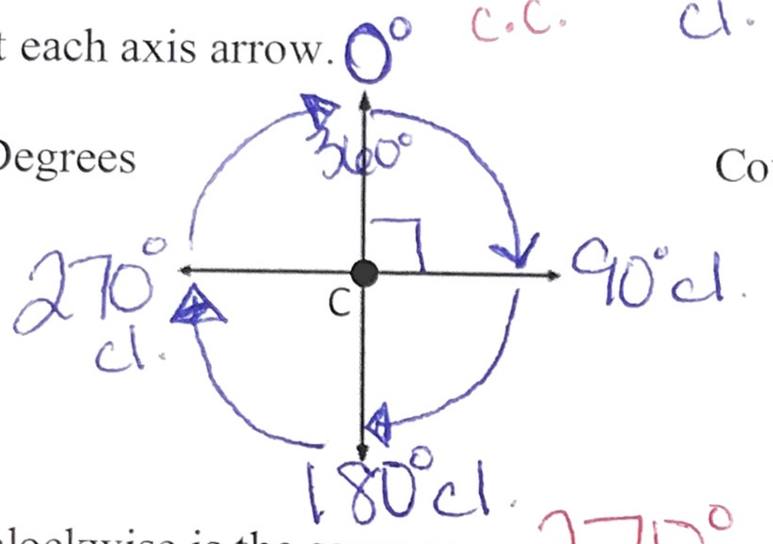
The hands don't just spin however they want, they are all attached to a **point in the center** of the clock.

All rotations require a fixed center point, a direction, and a degree. Our center will always be the origin!

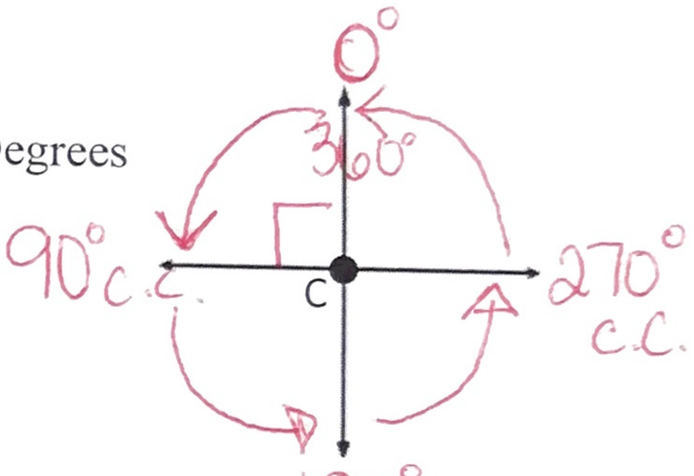
c.c. cl. # 0

Label the degrees at each axis arrow.

Clockwise Degrees



Counter-Clockwise Degrees



90° clockwise is the same as 270° counterclockwise c.c.

270° clockwise is the same as 90° counterclockwise

180° clockwise is the same as 180° counterclockwise

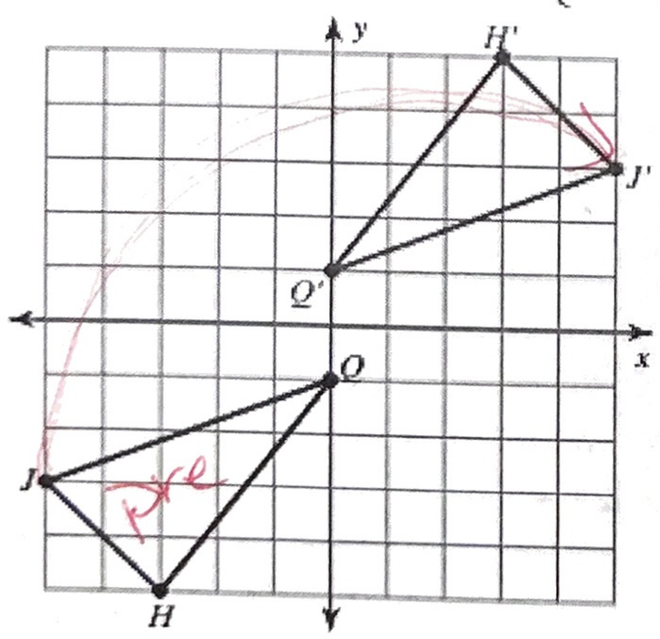
360° is a fullcircle

Remember that each quadrant on a graph is 90° so you can count the number of quadrants a shape has moved to determine how many degrees it has rotated.

Describing rotations

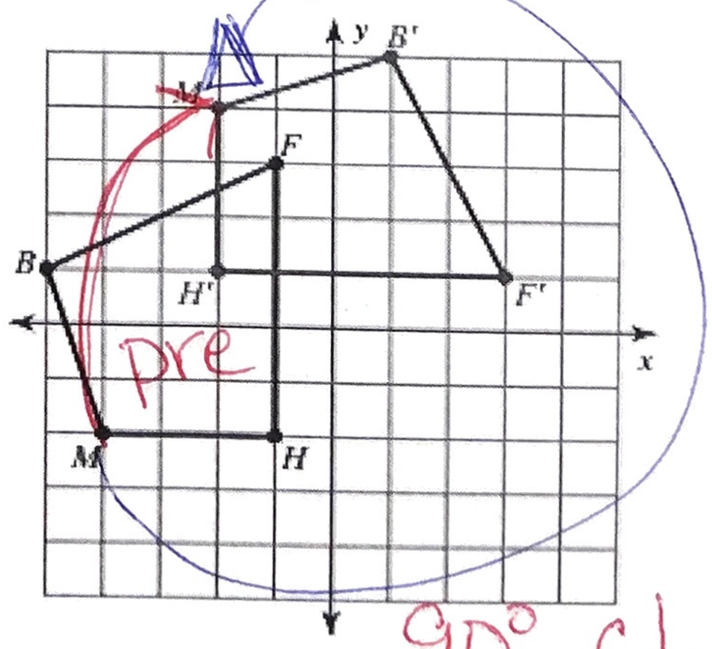
Tell how each figure was rotated (remember to give all necessary details).

1.



180° cl. center at the origin

2. (3)

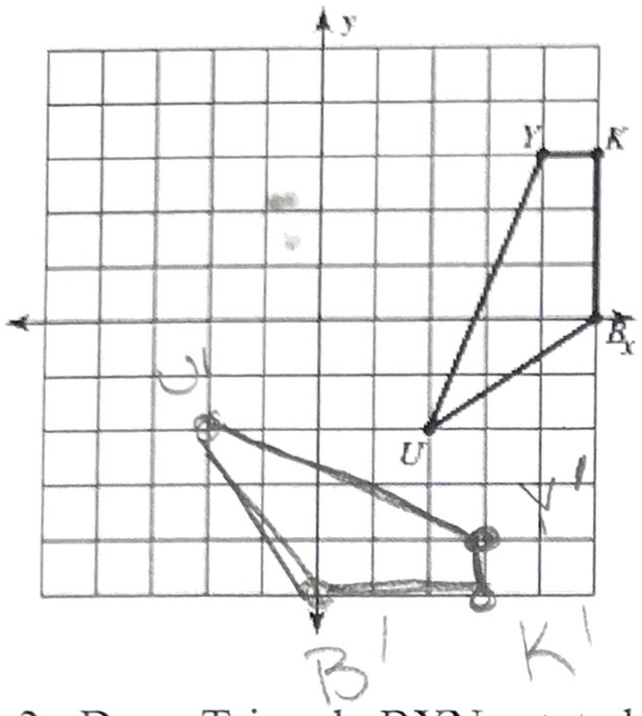


90° cl. center origin

270° cc. center origin

B. Drawing rotations can be tricky!

We are going to use patty paper to help us. You canNOT use patty paper on the ACT. However, **on the ACT Aspire, you are provided graph paper, USE IT!**

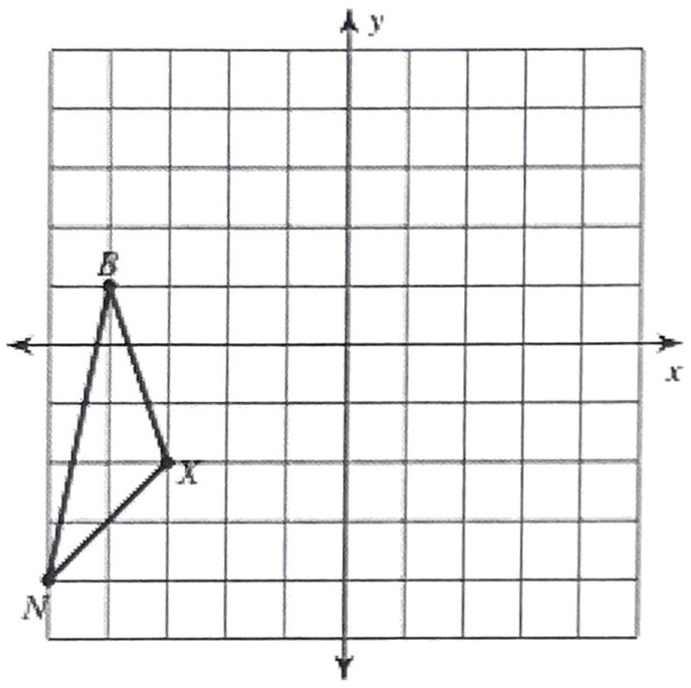


1. Draw the image of quadrilateral KBUY rotated 90° clockwise about the origin.

Y'(3,-4) B'(0,-5)

K'(3,-5) U'(-2,-2)

2. Draw Triangle BXN rotated 180°around the origin

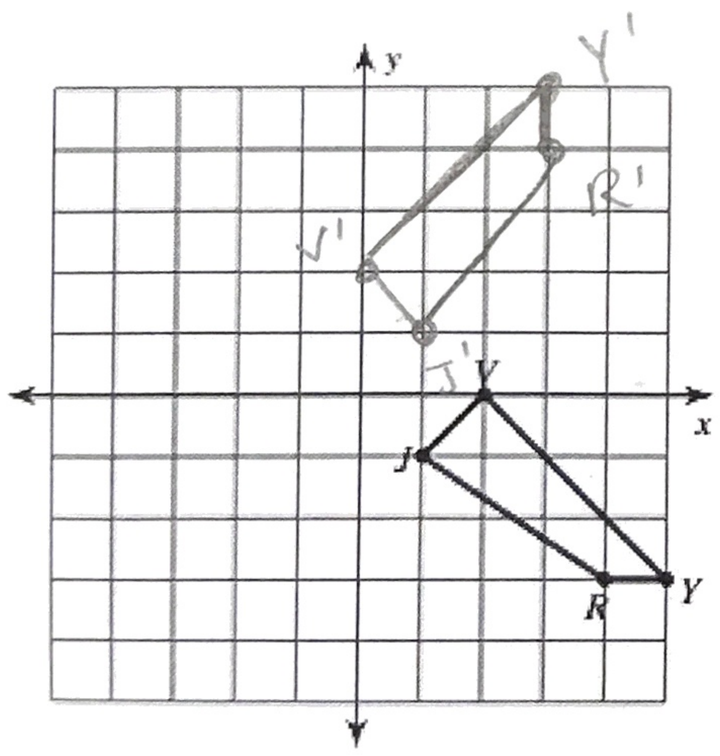


B'(4,-1)

X'(3,2)

N'(5,4)

3. Draw quadrilateral JVYR rotate 90° counter- clockwise around the origin



J'(1,1)

V'(0,2)

R'(3,4)

Y'(3,5)

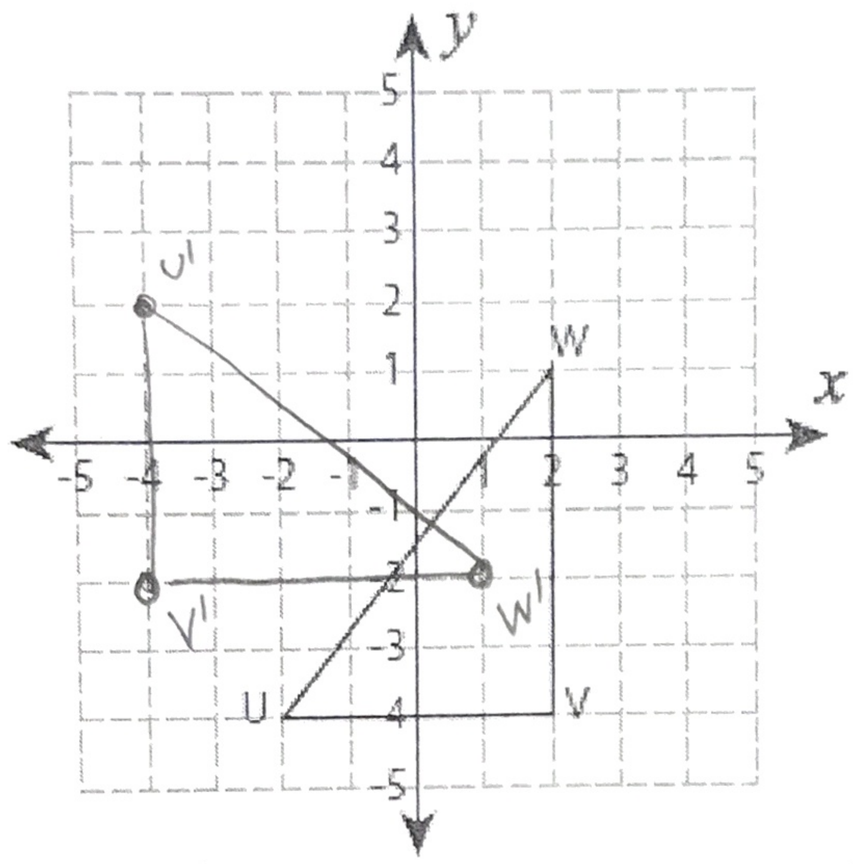
4. Your turn using the provided practice worksheet.

Rotations Practice Sheet Name: Key

Draw each rotation that is described. Use the origin as the center for all rotations.

Give the coordinates of your image.

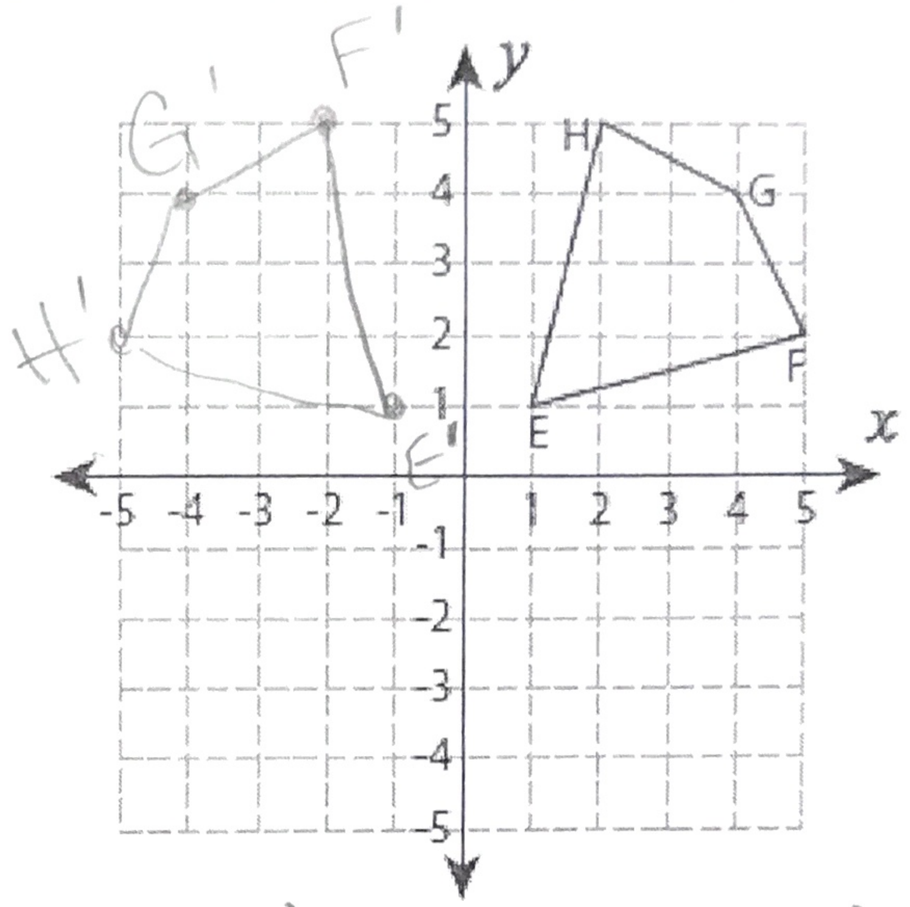
1. 90° clockwise rotation



U': (-4,2), V': (-4,-2)

W': (1,-2)

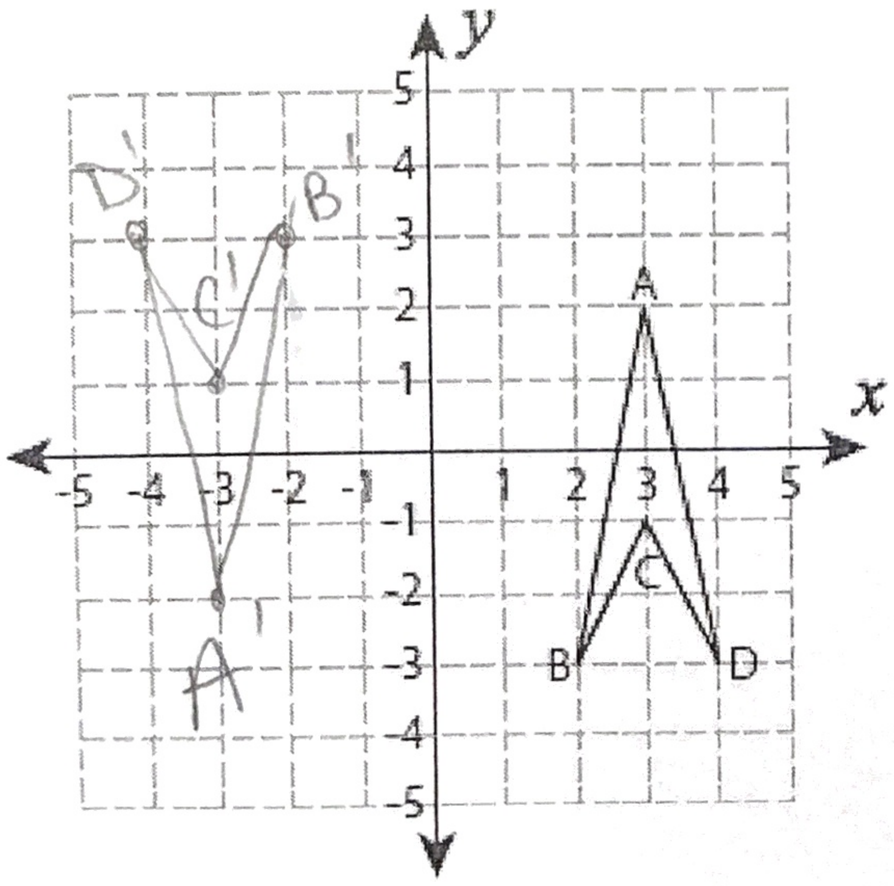
2. 90° counterclockwise rotation



E': (-1,1), F': (-2,5)

G': (-4,4), H': (-5,2)

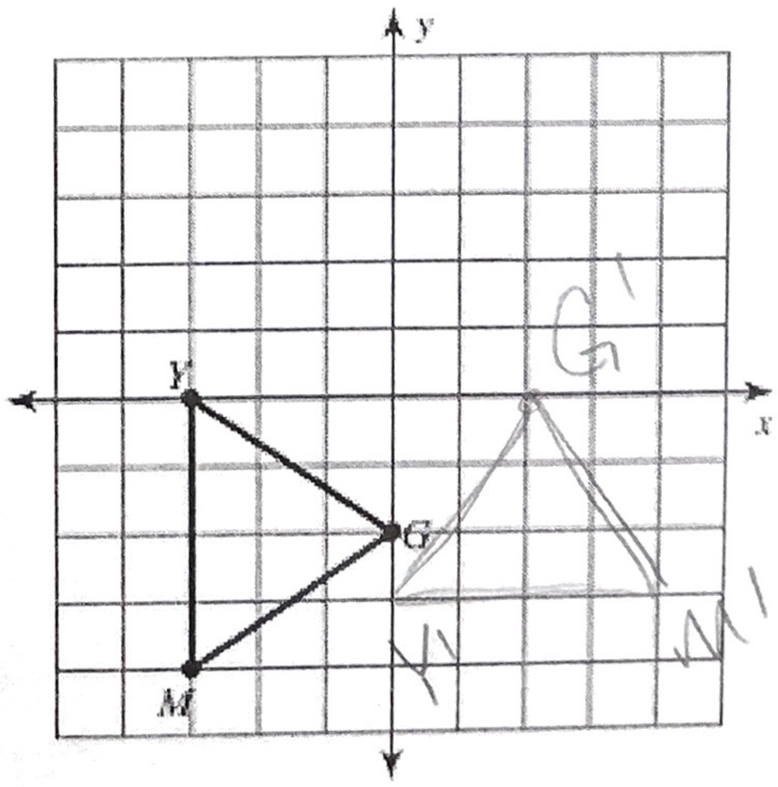
3. 180° rotation



A': (-3,-2), B': (-2,3)

C': (-3,1), D': (-4,3)

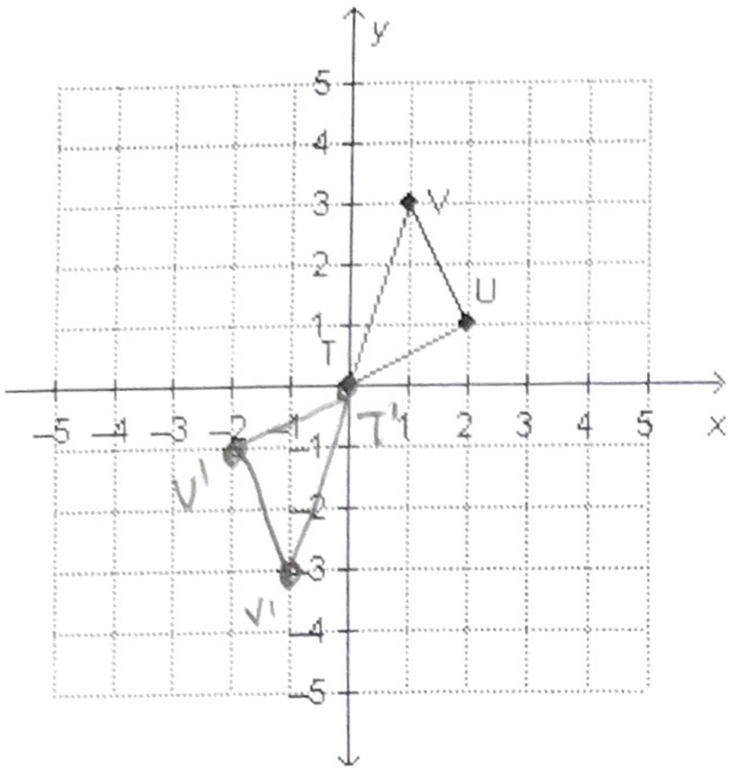
4. Rotate 90° counter-clockwise



Y' (0,-3) G' (2,0)

M' (4,-3)

5. Rotate 180° clockwise

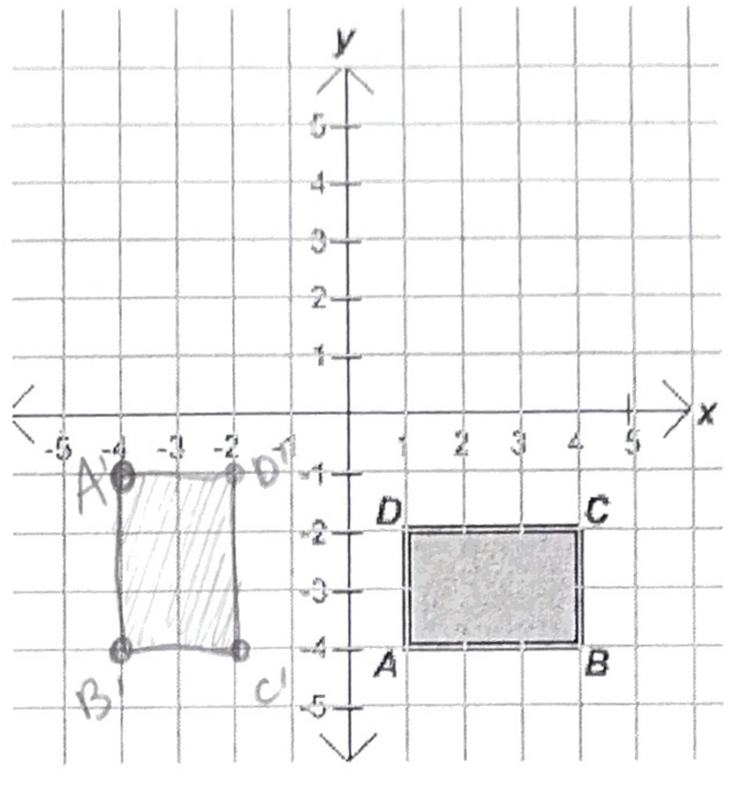


T' (0,0)

U' (-2,-1)

V' (-1,-3)

6. Rotate 90° clockwise



A' (-4,-1)

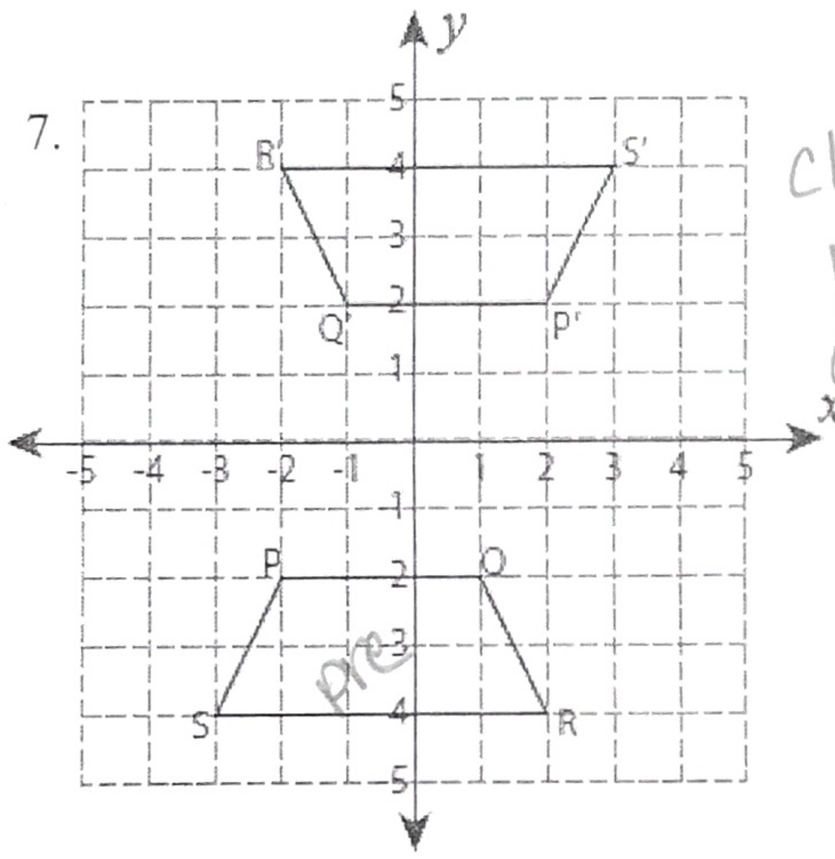
B' (-4,-4)

C' (-2,-4)

D' (-2,-1)

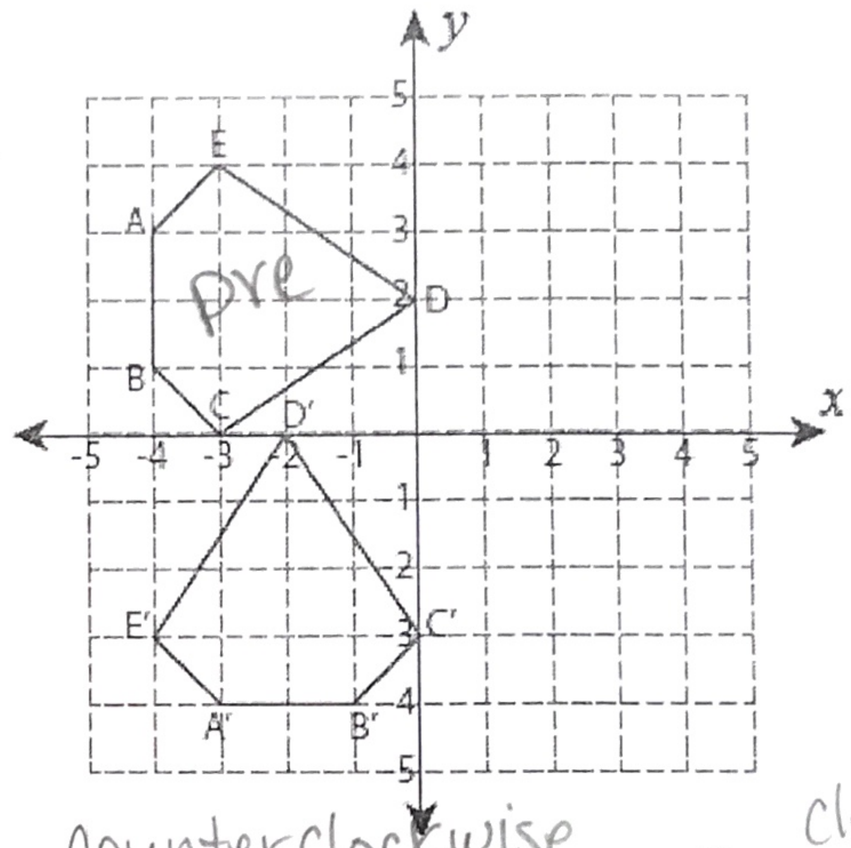
Describe each rotation that is pictured below. Remember to give a direction, degree, and center!

7.



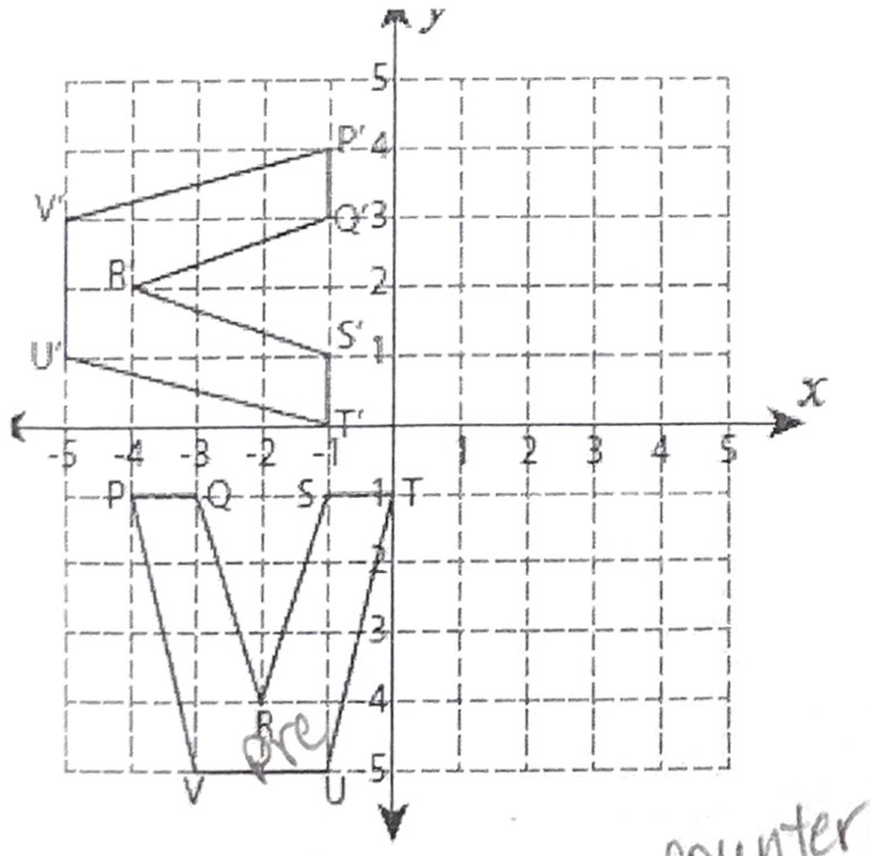
clockwise 180° around the origin

8.



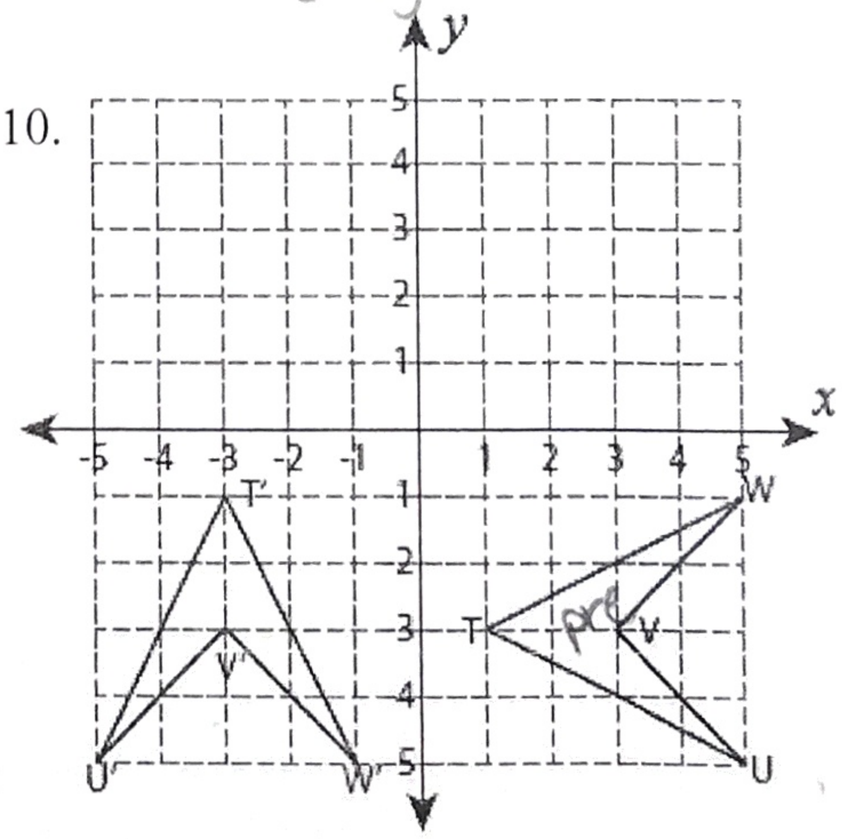
Counterclockwise 90° around the origin OR clockwise 270° around the origin

9.



clockwise 90° around the origin OR counterclockwise 270° around the origin

10.



Same as #9