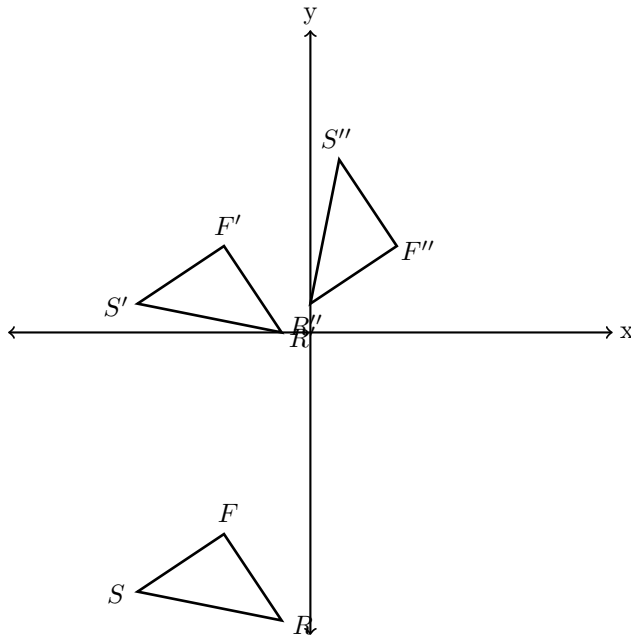


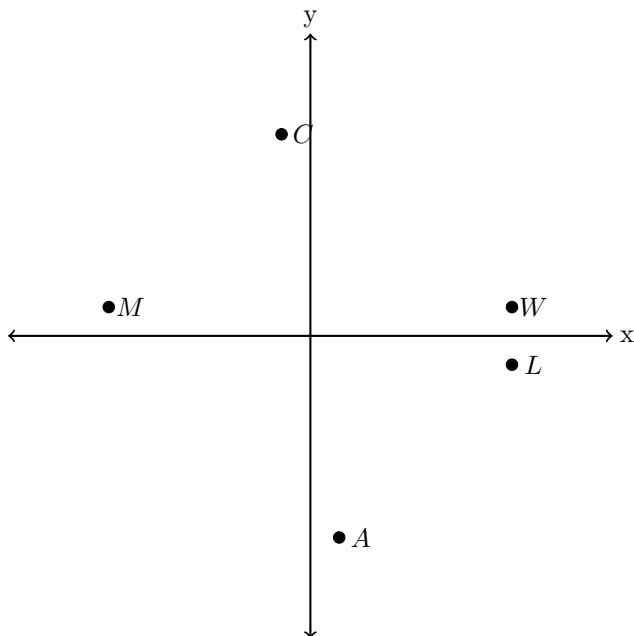
1. In the graph below, $\triangle SFR$ follows a sequence of transformations to make $\triangle S''F''R''$.



What is the sequence of transformations?

- (1) Reflection then reflection
- (2) Translation then reflection
- (3) Translation then rotation
- (4) Reflection then rotation
- (5) I do not know. (Worth $\frac{1}{3}$ points)

2. In the graph below, there are several points plotted.



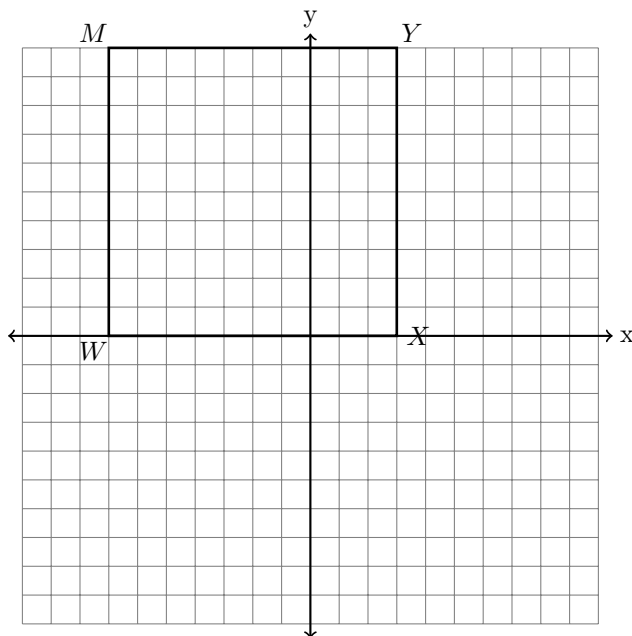
After point W is rotated 90° counterclockwise around the origin, which point is its image?

- (1) L
- (2) M
- (3) C
- (4) A
- (5) I do not know. (Worth $\frac{1}{3}$ points)

3. Given $\triangle MEN$, after which of the following transformations, will $\triangle MEN$ *not* be congruent to $\triangle M'E'N'$?

- (1) A reflection over the x -axis
- (2) A translation 5 right and 1 up
- (3) A dilation with a scale factor of 2
- (4) A rotation 180° counterclockwise around the point $(-7, -10)$
- (5) I do not know. (Worth $\frac{1}{3}$ points)

4. In the diagram below square $WMYX$ is drawn.



Which of the following will *not* map the square onto itself?

- (1) $x = 5$
- (2) Rotation 90° around $(-2, 5)$
- (3) $y = x + 7$
- (4) $y = 5$
- (5) I do not know. (Worth $\frac{1}{3}$ points)

5. Which shape always has exactly 9 lines of reflection that will map it onto itself?

- (1) square
- (2) regular octagon
- (3) regular hexagon
- (4) regular nonagon
- (5) I do not know. (Worth $\frac{1}{3}$ points)

6. What is the minimum number of degrees for a regular triangle to rotate onto itself?

(1) 40°

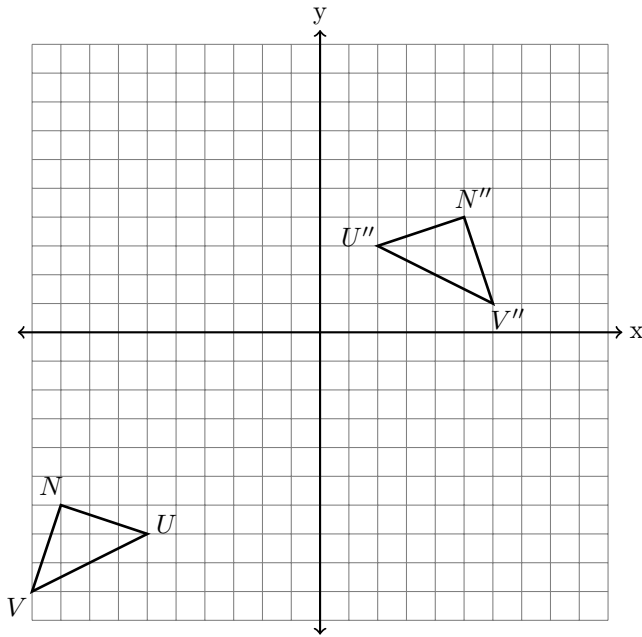
(2) 72°

(3) 120°

(4) 45°

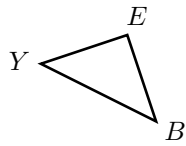
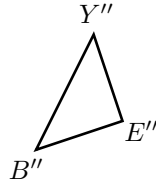
(5) I do not know. (Worth $\frac{1}{3}$ points)

7. Given the graph below, identify the sequence of transformations used to map $\triangle VNU$ onto $\triangle V''N''U''$.



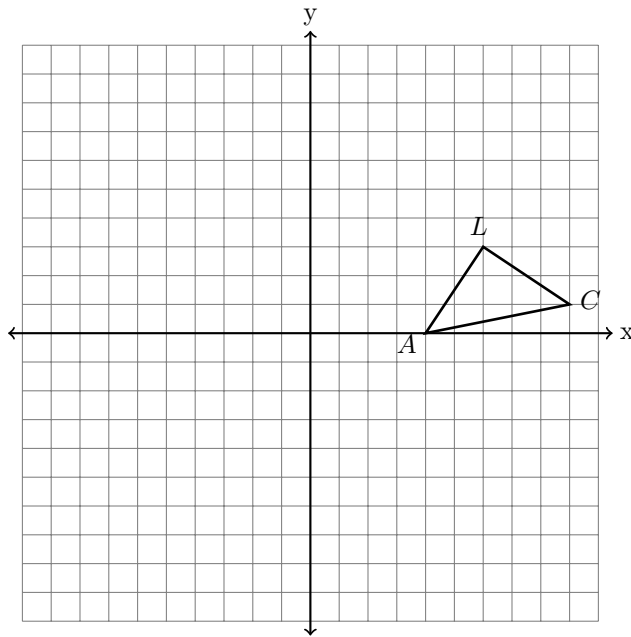
Explain why $\triangle VNU$ is congruent to $\triangle V''N''U''$.

8. Below, $\triangle YEB$ follows a sequence of transformations to make $\triangle Y''E''B''$.



Describe a sequence of transformations that will map $\triangle YEB$ onto $\triangle Y''E''B''$.

9. Given $\triangle ALC$ on the set of axes below, graph $\triangle A'L'C'$ after a rotation of 90° counterclockwise around the origin.



10. In the graph below of $\triangle LOB$, perform a translation down 10 followed by a reflection over the line $x = 0$ to make $\triangle L''O''B''$.

