NAME_____**DATE**_____**PER.**____

ROTATIONS

Tell whether rotating each letter 90° clockwise would produce a letter of the alphabet. If yes, name the letter. Also tell if the letter has rotational symmetry

1. YES or NO Letter:	H	Rotational symmetry: Yes or No
2. YES or NO Letter:	M	Rotational symmetry: Yes or No
3. YES or NO Letter:	W	Rotational symmetry: Yes or No

Use the polygon below to perform the rotation indicated. Give the coordinates of the rotated polygon about the origin. WHEN PERFORMING EACH ROTATION, GO BACK TO THE ORIGINAL POLYGON.

4. 90° clockwise:

A'(_____, _____)

B'(_____, _____)

C'(_____, _____)

D'(_____, _____)

E'(_____, _____)

5. 180° :

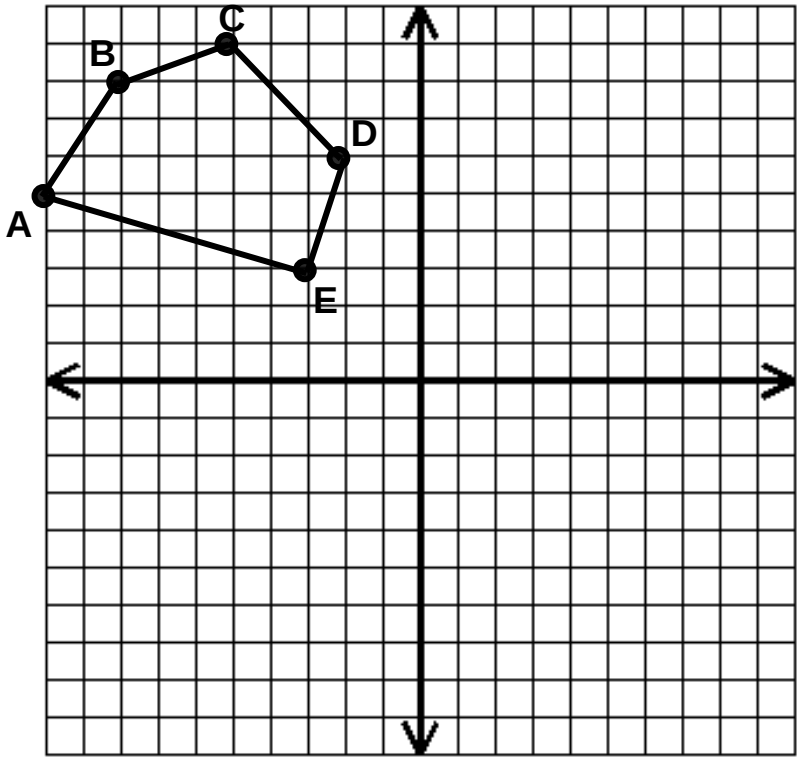
A'(_____, _____)

B'(_____, _____)

C'(_____, _____)

D'(_____, _____)

E'(_____, _____)



6. 90° counter-clockwise:

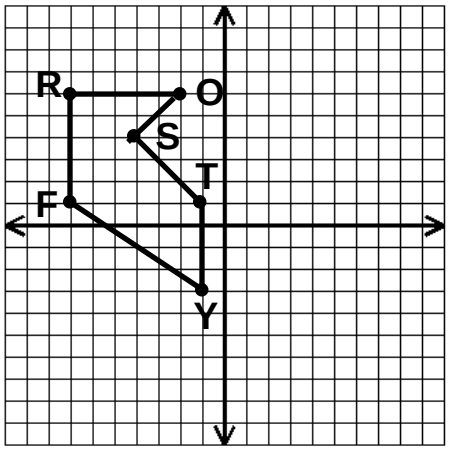
A'(___, ___) B'(____, ____) C'(____, ____) D'(___, ___) E'(___, ___)

Using the polygons in problems 4 – 6, answer the following.

7. _____	Find the equation of the line containing $\overline{AB}$.
8. _____	Find the equation of the line containing $\overline{DE}$.
9. _____ Why?	Tell whether the lines in problems 7 and 8 are parallel, perpendicular, or neither, and tell why.

Rotate the figure below 180° about the origin and give the coordinates of the rotated polygon.

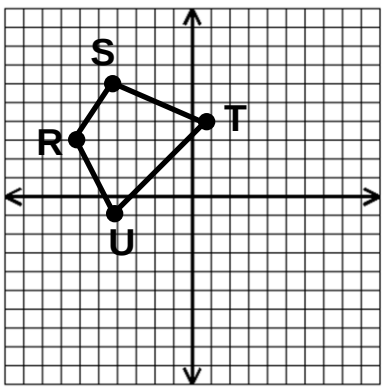
10. F'(_____, _____)
R'(_____, _____)
O'(_____, _____)
S'(_____, _____)
T'(_____, _____)
Y'(_____, _____)



Draw the reflections to the figures below and write the new coordinates.

11. R'(____, ____)
S'(____, ____)
T'(____, ____)
U'(____, ____)

Reflect across the y-axis.



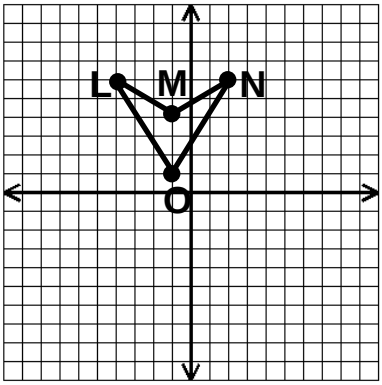
12. L'(____, ____)

M'(____, ____)

N'(____, ____)

O'(____, ____)

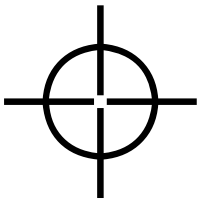
Reflect across the x-axis.



How many lines of symmetry does each figure have?

13.

14.



15. The endpoints of a line segment have coordinates (-3, 0) and (-3, 4). What are the coordinates of the image of the line segment after being rotated 90° counterclockwise about the origin.

A. (0, 3) and (4, 3)

B. (0, 3) and (3, 4)

C. (0, -3) and (4, -3)

D. (0, -3) and (-4, -3)

16. One of the coordinates of a pentagon has the coordinates (5, 5). What are the coordinates of this vertex after being reflected across the x-axis?

A. (-5, 5)

B. (5, -5)

C. (-5, -5)

D. Not here

17. What is the image of the point (-2, 5) when it is rotated counterclockwise about the origin by 90°?

A. (-5, 2)

B. (5, -2)

C. (-5, -2)

D. (2, -5)

18. Which polygon has rotational symmetry of 180°?

A. A regular hexagon
B. A parallelogram
C. A square
D. All of the above