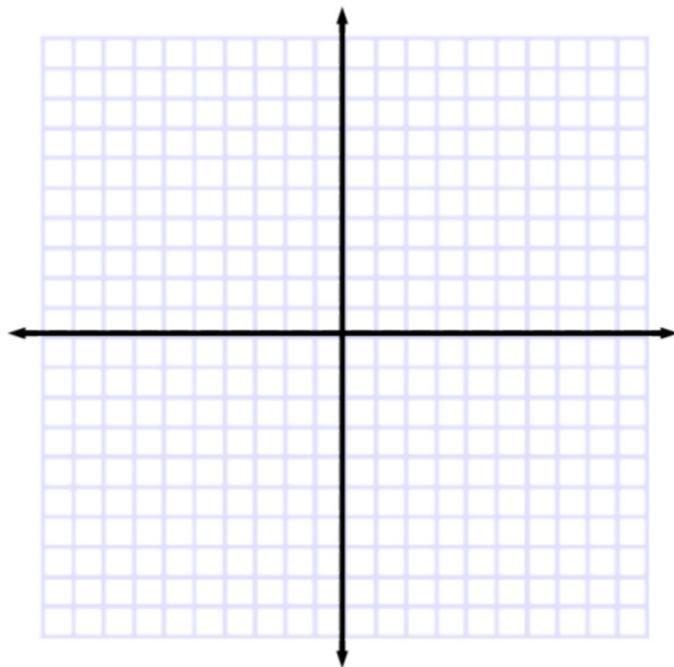Geometry
Review for Ch. 9 test (Mon.)

Project due Mon.
No new assignment   `

Graph each figure and its image after the specified reflection.
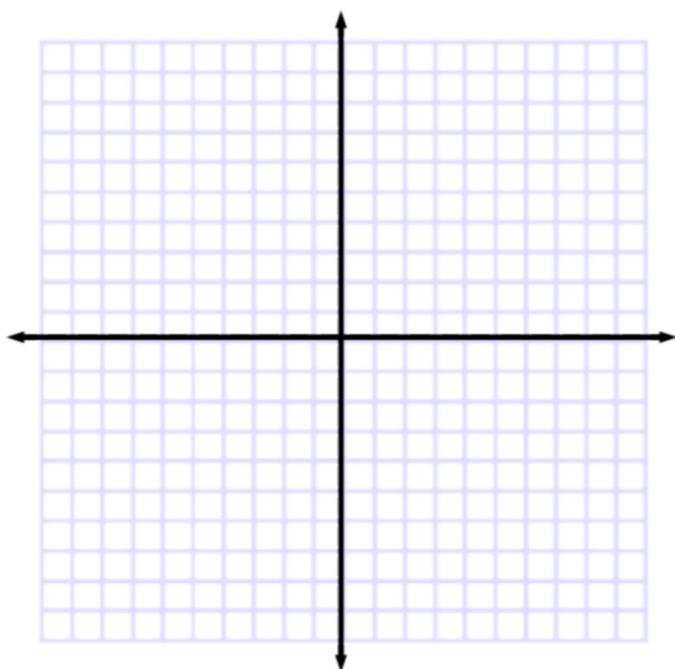
3. △*FGH* has vertices *F*(−4, 3), *G*(−2, 0), and *H*(−1, 4); in the *y*-axis

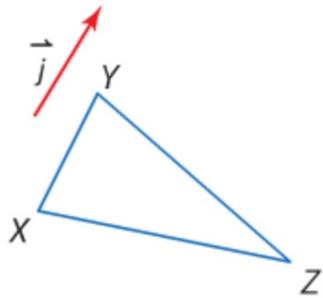**Graph each figure and its image after the specified translation.**

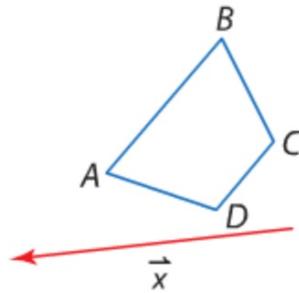**6.** $\triangle ABC$ with vertices $A(0, 0)$, $B(2, 1)$, $C(1, -3)$; $\langle 3, -1 \rangle$

Copy the figure and the given translation vector. Then draw the
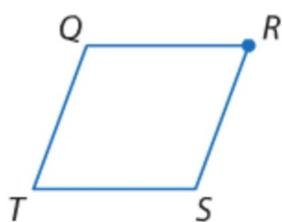translation of the figure along the translation vector. (Lesson 9-2)

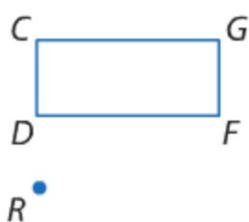**8.**

$\vec{j}$

Y

X

Z

9.

B

A

C

D

$\vec{x}$

Copy each polygon and point *R*. Then use a protractor and ruler
to draw the specified rotation of each figure about point *R*.
(Lesson 9-3)

11. 45°
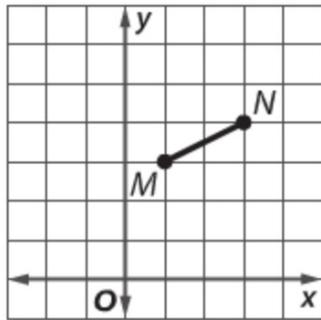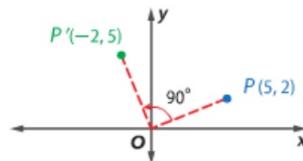

12. 60°

13. MULTIPLE CHOICE What is the image of point *M* after a rotation of 90° about the origin? (Lesson 9-3)

KeyConcept Rotations in the Coordinate Plane

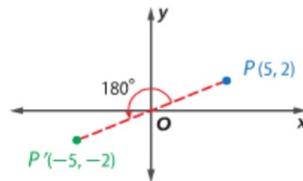|	
90° Rotation To rotate a point 90° counterclockwise about the origin, multiply the *y*-coordinate by −1 and then interchange the *x*- and *y*-coordinates. Symbols $(x, y) \rightarrow (-y, x)$	**Example** $P'(-2, 5)$ y $P(5, 2)$ $90°$ O x
180° Rotation To rotate a point 180° counterclockwise about the origin, multiply the *x*- and *y*-coordinates by −1. Symbols $(x, y) \rightarrow (-x, -y)$	**Example** y $P(5, 2)$ $180°$ O x $P'(-5, -2)$
270° Rotation To rotate a point 270° counterclockwise about the origin, multiply the *x*-coordinate by −1 and then interchange the *x*- and *y*-coordinates. Symbols $(x, y) \rightarrow (y, -x)$	**Example** y $P(5, 2)$ $270°$ O x $P'(2, -5)$
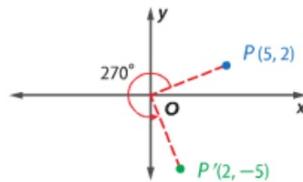
Graph each figure with the given vertices and its image after the indicated transformation.

23. $\overline{CD}$: $C(3, 2)$ and $D(1, 4)$
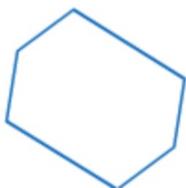Reflection: in $y = x$
Rotation: 270° about the origin.
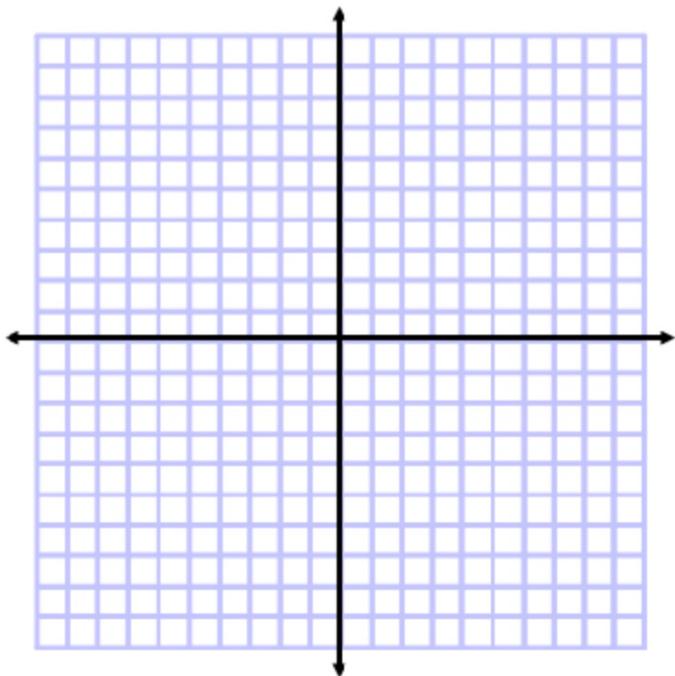
26. Copy and reflect figure *T* in line ℓ and then line *m*. Then describe a single transformation that maps *T* onto *T''*.
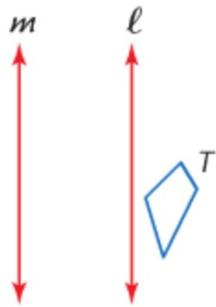
9-5 Symmetry

State whether each figure appears to have line symmetry. Write *yes* or *no*. If so, copy the figure, draw all lines of symmetry, and state their number.

27.

28.

State whether each figure has rotational symmetry. Write *yes* or *no*. If so, copy the figure, locate the center of symmetry, and state the order and magnitude of symmetry.

29.

30.

32. Copy the figure and point S. Then
use a ruler to draw the image of
the figure under a dilation with
center S and scale factor $r = 1.25$.

Example 6

Square *ABCD* has vertices *A*(0, 0), *B*(0, 8), *C*(8, 8), and *D*(8, 0). Find the image of *ABCD* after a dilation centered at the origin with a scale factor of 0.5.