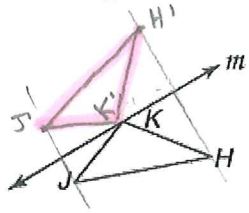
Geometry
Practice 9-1

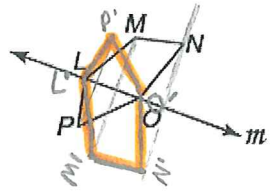
Name Key
Hour _____

Draw the image of each figure under a reflection in line m.

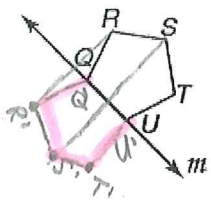
1.



2.



3.



a). Write the rule for each reflection.
b). Without graphing, find the points of the image under the given reflection.

27. $\overline{DJ}$ with endpoints $D(4, 4)$ and $J(-3, 2)$ in the y-axis

$(a, b) \rightarrow (-a, b)$

$D'(-4, 4)$
$J'(3, 2)$

30. quadrilateral $GHIJ$ with vertices $G(-2, -2)$, $H(2, 0)$, $I(3, 3)$, and $J(-2, 4)$ in the origin

$(a, b) \rightarrow (-a, -b)$

$G'(2, 2)$ $I'(-3, -3)$
$H'(-2, 0)$ $J'(2, -4)$

25. $\overline{AB}$ with endpoints $A(2, 4)$ and $B(-3, -3)$ in the x-axis

$(a, b) \rightarrow (a, -b)$

$A'(2, -4)$
$B'(-3, 3)$

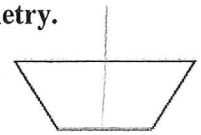
31. $\triangle ABC$ with vertices $A(-3, -1)$, $B(0, 2)$, and $C(3, -2)$ in the line $y = x$

$(a, b) \rightarrow (b, a)$

$A'(-1, -3)$
$B'(2, 0)$
$C'(-2, 3)$

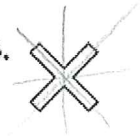
Determine how many lines of symmetry each figure has. Then determine whether the figure has point symmetry.

7.



One line of symmetry
No point symmetry

8.



4
yes

9. S

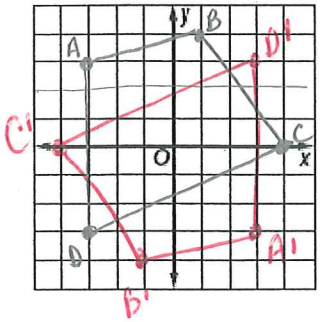
none
yes

Graph each figure and its image under the given reflection.

10. Rule: (a,b) → (-a, -b)

A' 3,-3 **B'** -1,-4 **C'** -4,0 **D'** 3,3

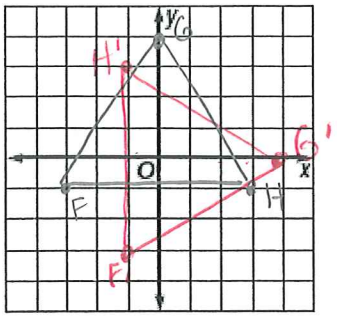
quadrilateral $ABCD$ with vertices $A(-3, 3)$, $B(1, 4)$, $C(4, 0)$, and $D(-3, -3)$ in the origin



11. Rule: (a,b) → (b,a)

F' (-1,-3) **G'** (4,0) **H'** (-1,3)

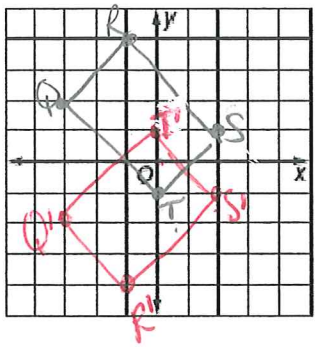
$\triangle FGH$ with vertices $F(-3, -1)$, $G(0, 4)$, and $H(3, -1)$ in the line $y = x$



12. Rule: (a,b) → (a,-b)

Q' (-3,-2) **R'** (-1,-4) **S'** (2,-1) **T'** (0,1)

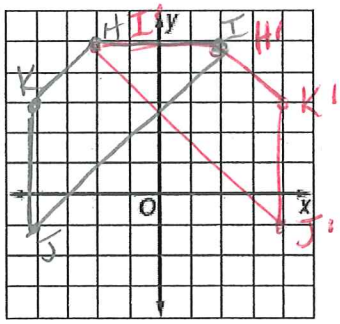
rectangle $QRST$ with vertices $Q(-3, 2)$, $R(-1, 4)$, $S(2, 1)$, and $T(0, -1)$ in the x-axis



13. Rule: (a,b) → (-a,b)

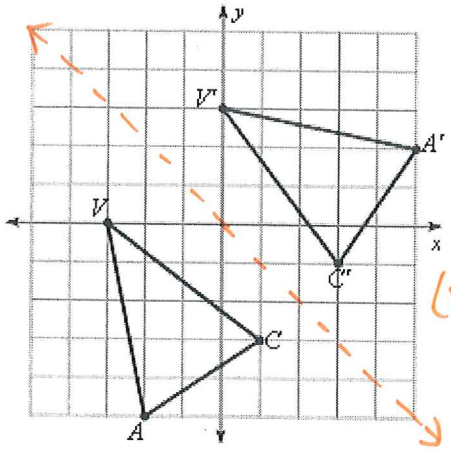
H' (2,5) **I'** (-2,5) **J'** (4,-1) **K'** (4,3)

trapezoid $HIJK$ with vertices $H(-2, 5)$, $I(2, 5)$, $J(-4, -1)$, and $K(-4, 3)$ in the y-axis



Write the rule to describe each transformation.

1)

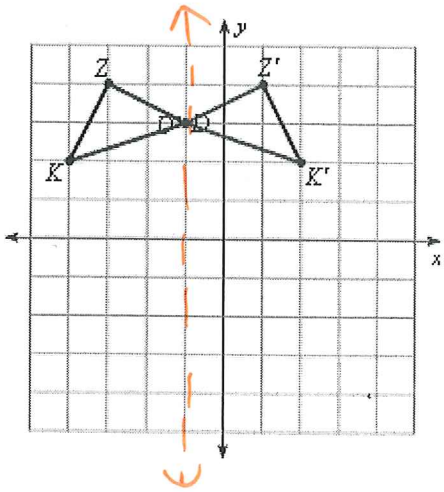


reflection across $y=-x$

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

$C(1,-3) \rightarrow C'(3,-1)$

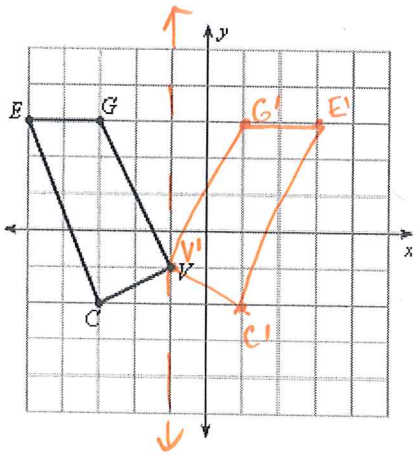
2)



reflection across $x=-1$

Graph the image of the figure using the transformation given.

3) reflection across $x = -1$



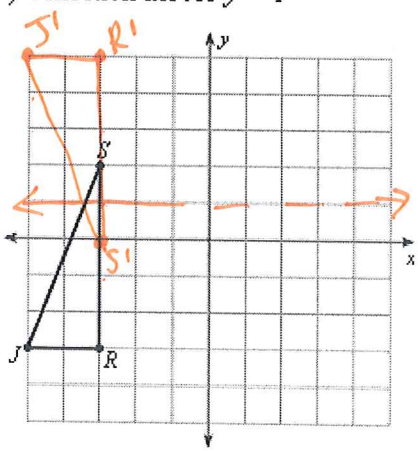
C′ = (1, −2)

E′ = (3, 3)

G′ = (1, 3)

V′ = (−1, −1)

4) reflection across $y = 1$



J′ = (−5, 5)

S′ = (−3, 0)

R′ = (−3, 5)