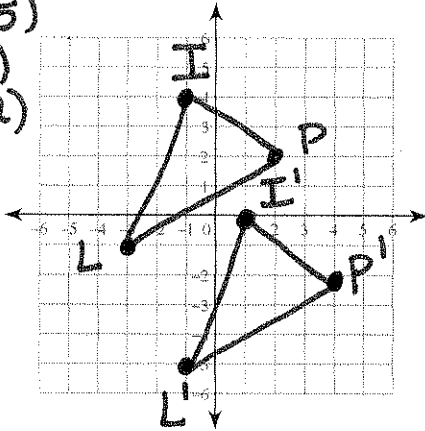


Graph and label each figure and the image under the given translation. Name the new coordinates.

1. $\triangle LIP$ with vertices $L(-3, -1)$, $I(-1, 4)$, and $P(2, 2)$ under the translation $(x, y) \rightarrow (x + 2, y - 4)$.

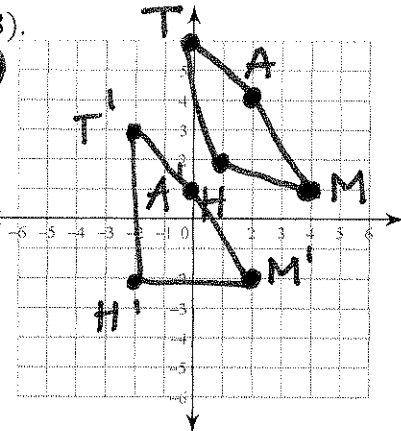
$L'(-1, -5)$
 $I'(1, 0)$
 $P'(4, -2)$



Write the rule in vector notation: $\langle 2, -4 \rangle$

2. Quadrilateral MATH with vertices $M(4, 1)$, $A(2, 4)$, $T(0, 6)$, and $H(1, 2)$ under the translation $(x, y) \rightarrow (x - 2, y - 3)$.

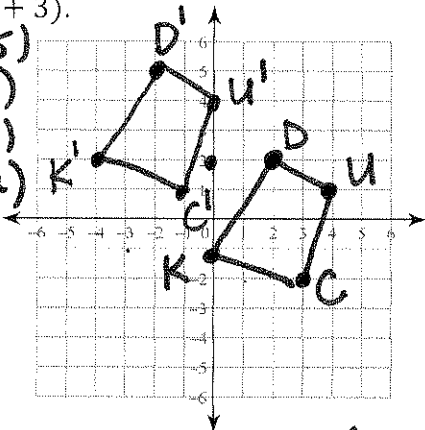
$M'(2, -2)$
 $A'(0, 1)$
 $T'(-2, 3)$
 $H'(-1, -1)$



Write the rule in vector notation: $\langle -2, -3 \rangle$

3. Quadrilateral DUCK with vertices $D(2, 2)$, $U(4, 1)$, $C(3, -2)$, and $K(0, -1)$ under the translation $(x, y) \rightarrow (x - 4, y + 3)$.

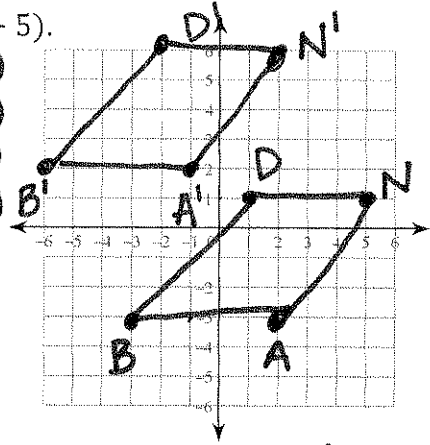
$D'(-2, 5)$
 $U'(0, 4)$
 $C'(-1, 1)$
 $K'(-4, 2)$



Write the rule in vector notation: $\langle -4, 3 \rangle$

4. Quadrilateral BAND with vertices $B(-3, -3)$, $A(2, -3)$, $N(5, 1)$, and $D(1, 1)$ under the translation $(x, y) \rightarrow (x - 3, y + 5)$.

$B'(-6, 2)$
 $A'(-1, 2)$
 $N'(2, 6)$
 $D'(-2, 6)$



Write the rule in vector notation: $\langle -3, 5 \rangle$

5. Gerald is rearranging the furniture in his living room. He has to leave before he is finished, so he draws the diagram below for his wife to place the endtable. Draw the new position of the endtable.



Include the answers to the following questions in your explanation. Use complete sentences!

- What method did you use?
- Is there only one possible answer?
- What does the arrow tell you?
- What do you call this motion?
- What could you call the table before it moved? After?

SKIP

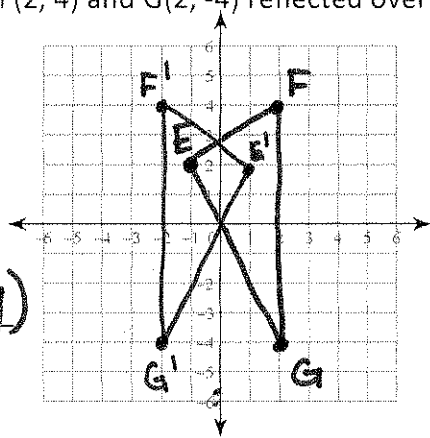
SKIP

SKIP

Graph and label each figure and its image under the given reflection. Then write the rule using formal notation.

6. $\triangle EFG$ if $E(-1, 2)$, $F(2, 4)$ and $G(2, -4)$ reflected over the y -axis.

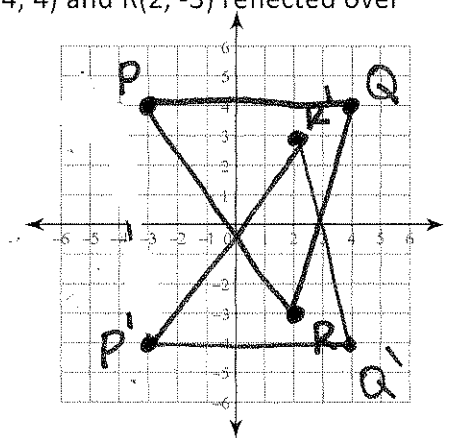
$E' (1, 2)$
 $F' (-2, 4)$
 $G' (-2, -4)$



Rule: $(-x, y)$

7. $\triangle PQR$ if $P(-3, 4)$, $Q(4, 4)$ and $R(2, -3)$ reflected over the x -axis.

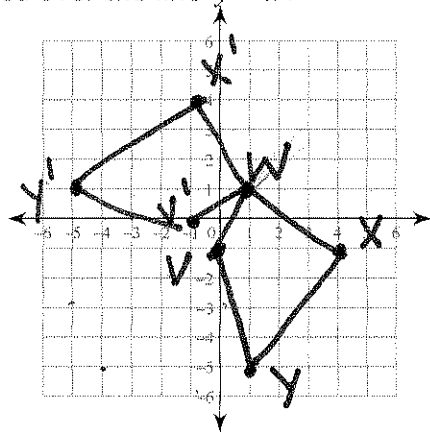
$P' (-3, -4)$
 $Q' (4, -4)$
 $R' (2, 3)$



Rule: $(x, -y)$

8. Quadrilateral $VWXY$ if $V(0, -1)$, $W(1, 1)$, $X(4, -1)$, and $Y(1, -5)$ reflected over the line $y = x$.

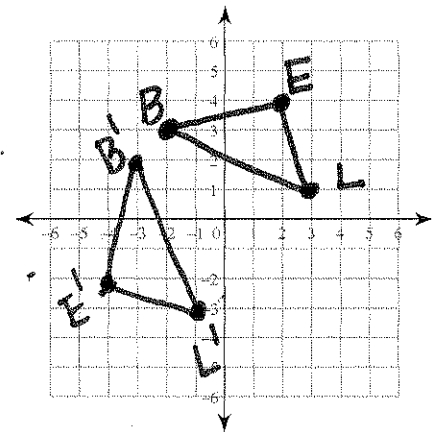
$V' (-1, 0)$
 $W' (1, 1)$
 $X' (-1, 4)$
 $Y' (-5, 1)$



Rule: (y, x)

9. $\triangle BEL$ if $B(-2, 3)$, $E(2, 4)$, and $L(3, 1)$ reflected over the line $y = -x$.

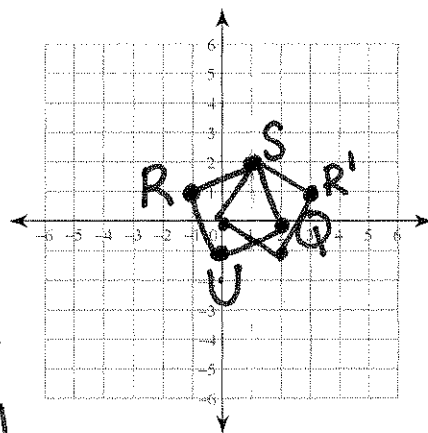
$B' (-3, 2)$
 $E' (-4, 2)$
 $L' (-1, 3)$



Rule: $(-y, -x)$

10. Square $SQUR$ if $S(1, 2)$, $Q(2, 0)$, $U(0, -1)$, and $R(-1, 1)$ reflected over the line $x = 1$.

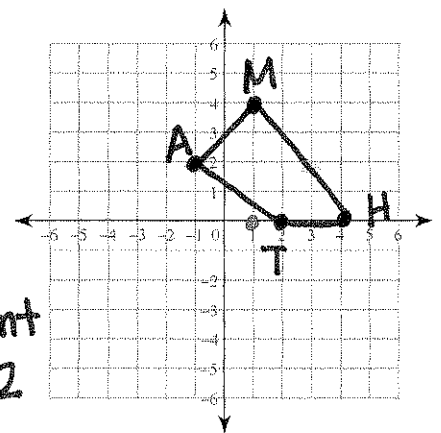
$S' (1, 2)$
 $Q' (0, 0)$
 $U' (2, -1)$
 $R' (3, 1)$



Rule: equi-distant from $x=1$

11. Quadrilateral $MATH$ if $M(1, 4)$, $A(-1, 2)$, $T(2, 0)$ and $H(4, 0)$ reflected over $y = 2$.

$M' (1, 0)$
 A' _____
 T' _____
 H' _____

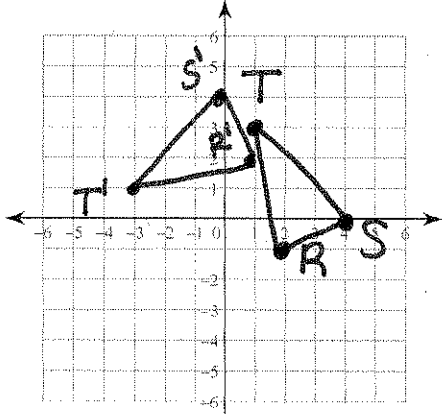


Rule: equidistant from $y=2$

Graph the preimage and image. List the coordinates of the image. Then write the rule in proper notation.

1) $\triangle RST$: $R(2, -1)$, $S(4, 0)$, and $T(1, 3)$

90° counter clockwise about the origin.

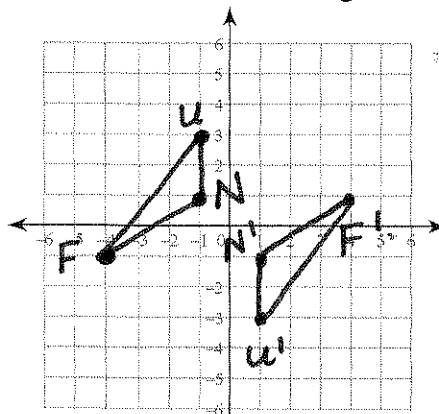


Rule: $(-y, x)$

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

2) $\triangle FUN$: $F(-4, -1)$, $U(-1, 3)$, and $N(-1, 1)$

180° clockwise about the origin.

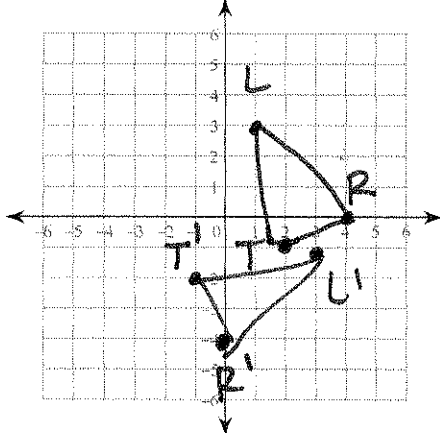


Rule: $(-x, -y)$

$F'(4, 1)$ $U'(1, -3)$ $N'(1, -1)$

3) $\triangle TRL$: $T(2, -1)$, $R(4, 0)$, and $L(1, 3)$

90° clockwise about the origin.

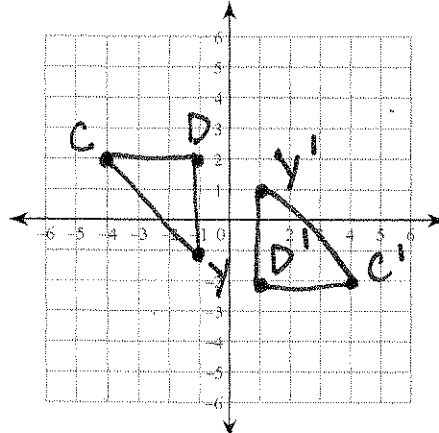


Rule: $(y, -x)$

$T'(-1, -2)$ $R'(0, -4)$ $L'(3, -1)$

4) $\triangle CDY$: $C(-4, 2)$, $D(-1, 2)$, and $Y(-1, -1)$

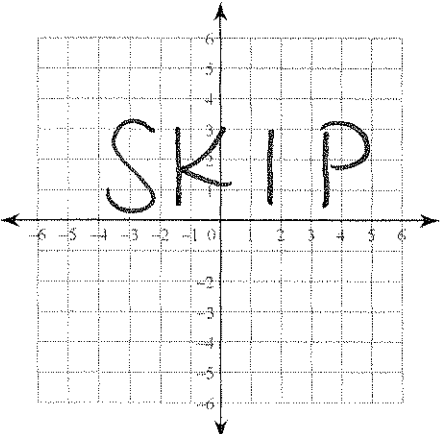
180° counter clockwise about the origin.



Rule: $(-x, -y)$

$C'(4, -2)$ $D'(1, -2)$ $Y'(1, 1)$

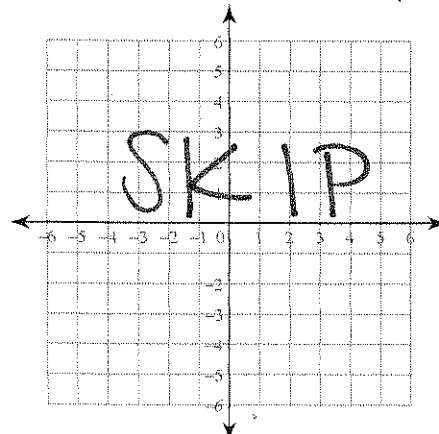
~~5) $\triangle SCR$: $S(-3, 1)$, $C(-1, 3)$, and $R(-1, -1)$
90° clockwise about the point $(1, 2)$~~



Rule: _____

$S'(_, _)$ $C'(_, _)$ $R'(_, _)$

~~6) $\triangle SCR$: $S(-3, 1)$, $C(-1, 3)$, and $R(-1, -1)$
90° counter clockwise about the point $(1, 2)$~~

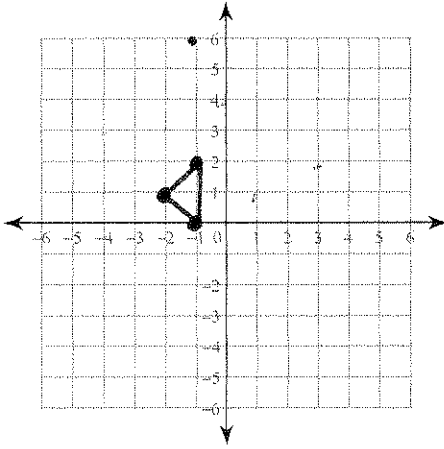


Rule: _____

$S'(_, _)$ $C'(_, _)$ $R'(_, _)$

Graph and label each figure and its image under the given reflection. Write the rule using formal notation.

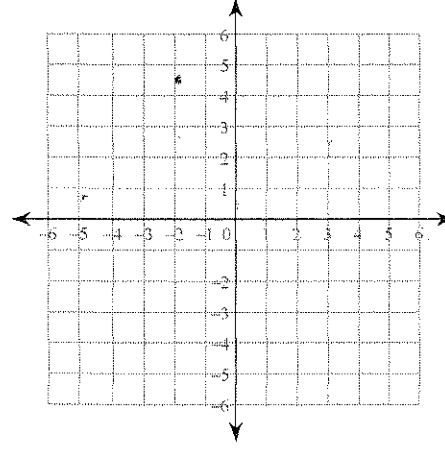
1) Dilate $\triangle QRS$ if $Q(-1, 0)$, $R(-1, 2)$, $S(-2, 1)$
by a magnitude of 2 from the origin.



$Q'(-2, 0)$
 $R'(-2, 4)$
 $S'(-4, 2)$

Rule: $(2x, 2y)$

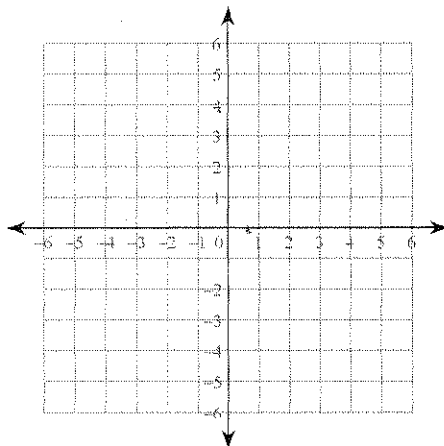
2) Dilate $\triangle TRK$ if $T(-1, -2)$, $R(1, 0)$, $K(0, 1)$
by a magnitude of 3 from the origin.



$T'(-3, -6)$
 $R'(3, 0)$
 $K'(0, 3)$

Rule: $(3x, 3y)$

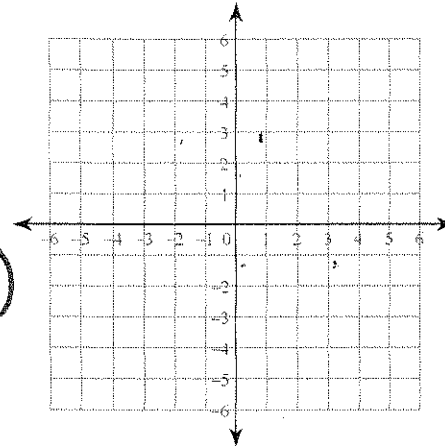
3) Dilate $\triangle XYZ$ if $X(-4, 0)$, $Y(-4, 3)$, $Z(-2, -2)$
by a magnitude of $\frac{1}{2}$ from the origin.



$X'(-2, 0)$
 $Y'(-2, 1.5)$
 $Z'(-1, -1)$

Rule: $(\frac{1}{2}x, \frac{1}{2}y)$

4) Dilate $\triangle IBM$ if $I(2, -4)$, $B(1, 2)$, $M(4, 1)$
by a magnitude of $\frac{3}{2}$ from the origin.

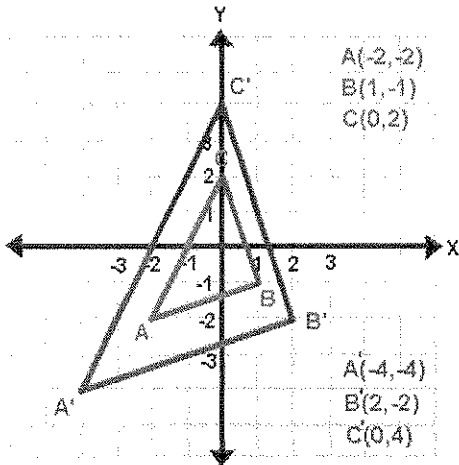


$I'(3, -6)$
 $B'(3/2, 3)$
 $M'(6, 3/2)$

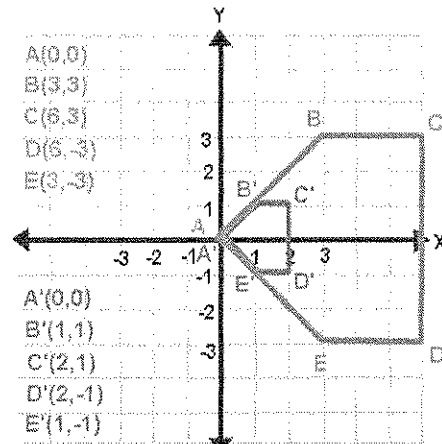
Rule: $(\frac{3}{2}x, \frac{3}{2}y)$

Determine the scale factor that was used to dilate the following figures.

5)



Scale Factor: 2



Scale Factor: $\frac{1}{3}$ $\frac{1}{3}$