

Warm up:

Rotate triangle AXE 90° about the origin, then reflect over the line $x=2$. List the coordinates of AXE, A'X'E', and A''X''E''.

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

$$A(-2, 1)$$

$$A'(-1, -2)$$

$$X(4, 2)$$

$$X'(-2, 4)$$

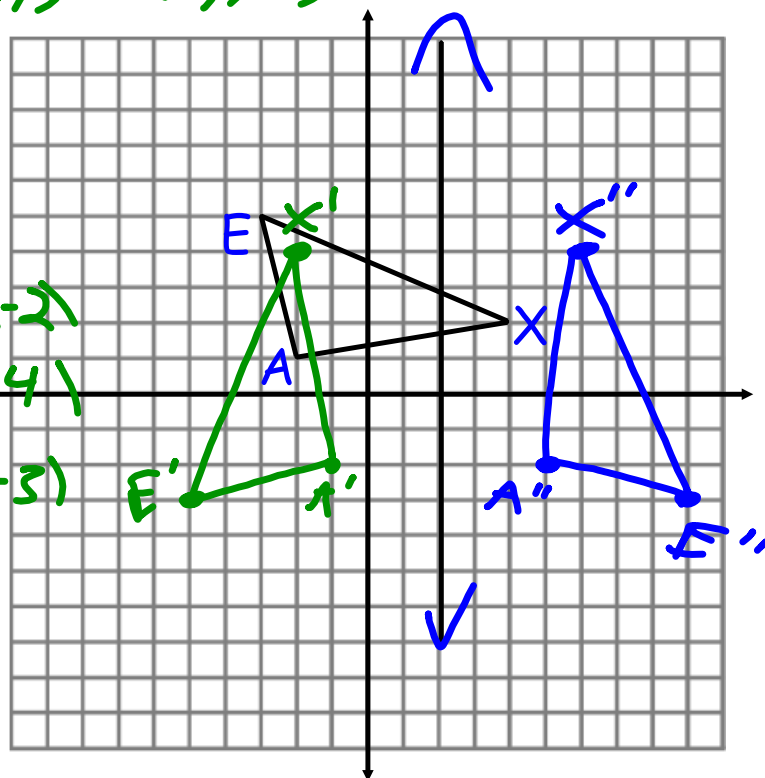
$$E(-3, 5)$$

$$E'(-5, -3)$$

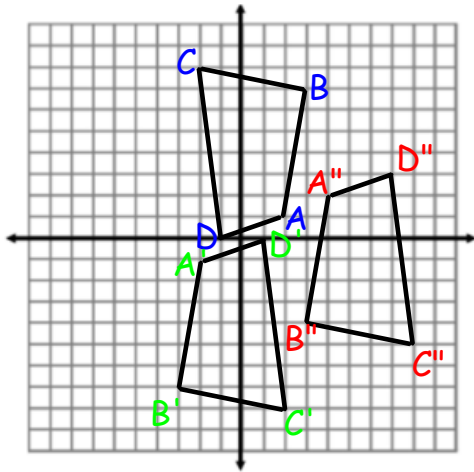
$$A''(5, -2)$$

$$X''(6, 4)$$

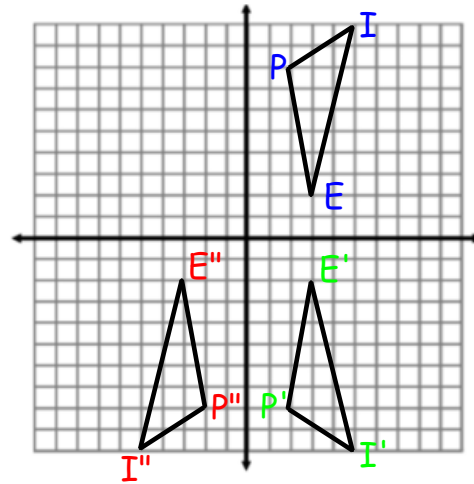
$$E''(9, 3)$$



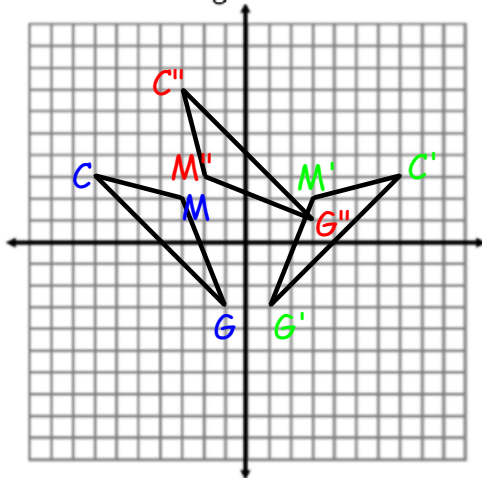
1) Graph the figure ABCD with A(2,1), B(3,7), C(-2,8), and D(-1,0). Rotate 180° about the origin, then translate using the rule $(x,y) \rightarrow (x+6, y+3)$.



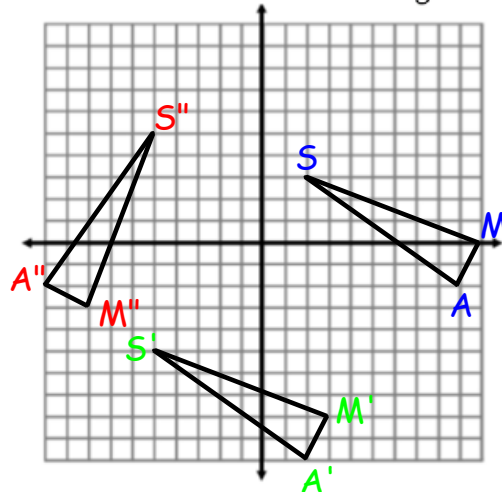
3) Graph the figure PIE with P(2,8), I(5,10), and E(3,2). Reflect the figure over the x-axis, then reflect it over the y-axis.



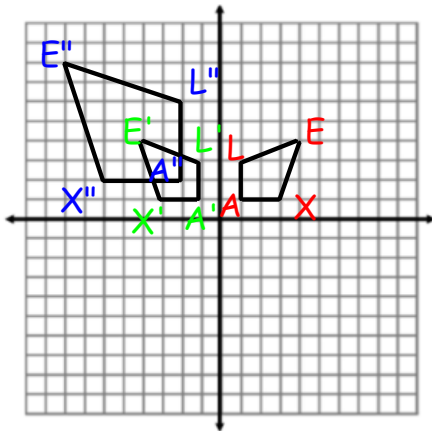
2) Graph the figure MCG with M(-3,2), C(-7,3), and G(-1,-3). Reflect the figure over the y-axis, then rotate it 90° about the origin.



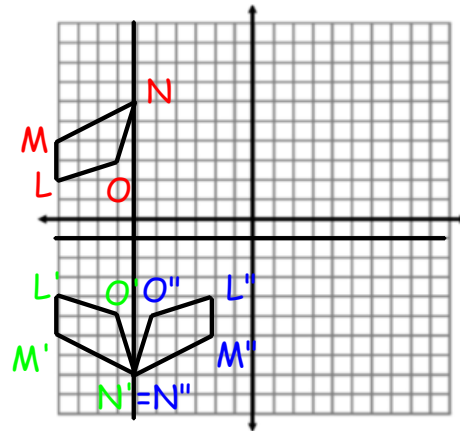
4) Graph the figure AMS with A(9,-2), M(10,0), and S(2,3). Translate the figure using the rule $(x,y) \rightarrow (x-7, y-8)$, then rotate 270° about the origin.



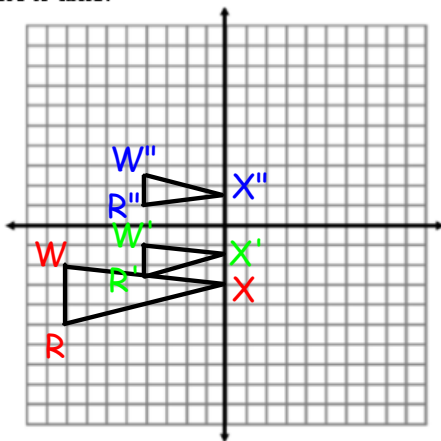
5) Graph the figure ALEX with $A(1,1)$, $L(1,3)$, $E(4,4)$, and $X(3,1)$. Reflect the figure over the y -axis, then dilate with scale factor 2.



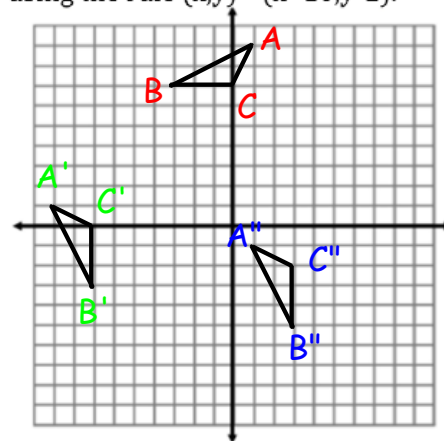
7) Graph the figure LMNO with $L(-10,2)$, $M(-10,4)$, $N(-6,6)$ and $O(-7,3)$. Reflect the figure over the line $y=-1$, then reflect it over the line $x = -6$.



6) Graph the figure WRX with $W(-8,-2)$, $R(-8,-5)$, and $X(0,-3)$. Dilate with scale factor $\frac{1}{2}$, then reflect over the x -axis.



8) Graph the figure ABC with $A(1,9)$, $B(-3,7)$, and $C(0,7)$. Rotate the figure 90° about the origin, then translate it using the rule $(x,y) \rightarrow (x+10,y-2)$.



$$\textcircled{3} \quad y = -x$$

$$\text{slope} = -1$$

$$\text{y-intercept} = 0$$

$$\textcircled{D} (-6, -3) \quad (-2, -5)$$

$$\frac{\Delta y}{\Delta x} = \frac{-3 + (+5)}{-6 + (+2)} = \frac{2}{-4} = -\frac{1}{2}$$

$$y = -\frac{1}{2}x + b$$

$$-3 = -\frac{1}{2}(-6) + b$$

$$-3 = 3 + b$$

$$\underline{-6 = b}$$

$$y = -\frac{1}{2}x - 6$$

$$\textcircled{10} (4, -6) \quad (7, 3)$$

$$\frac{\Delta y}{\Delta x} = \frac{-6 - 3}{4 - 7} = \frac{-9}{-3} = 3$$

$$y = 3x + b$$

$$3 = 3(7) + b$$

$$3 = 21 + b$$

$$\begin{array}{r} -21 \\ 3 = 21 + b \\ \hline -18 = b \end{array}$$

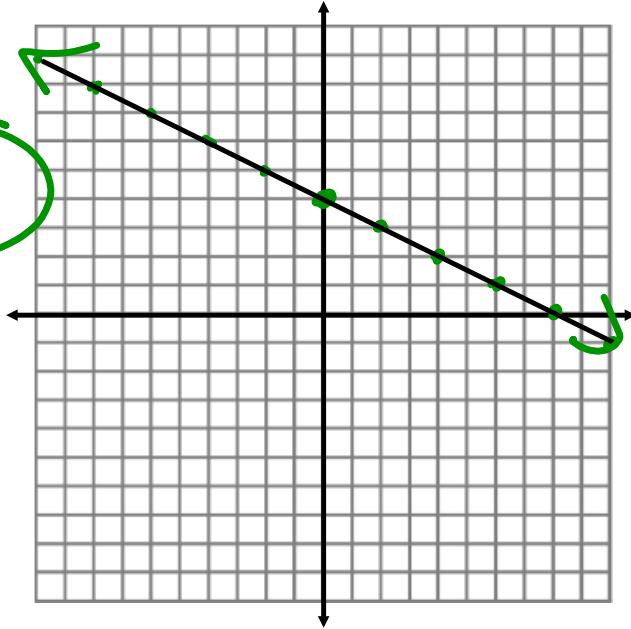
$$-18 = b$$

$$y = 3x - 18$$

$$\textcircled{22} \quad y = 8x$$

$$(0, 0)$$

$$y = -\frac{1}{2}x + 4$$



1) Graph quadrilateral WHAT with $W(5,-7)$, $H(6,-10)$, $A(6,-6)$, and $T(0,-5)$. Translate using the rule $(x,y) \rightarrow (x-5,y+3)$, then reflect over the line $y=-4$.

2) Graph $\triangle ABC$ with $A(8,2)$, $B(10,5)$, and $C(2,8)$. Rotate 270° about the origin, then dilate with scale factor $1/2$.

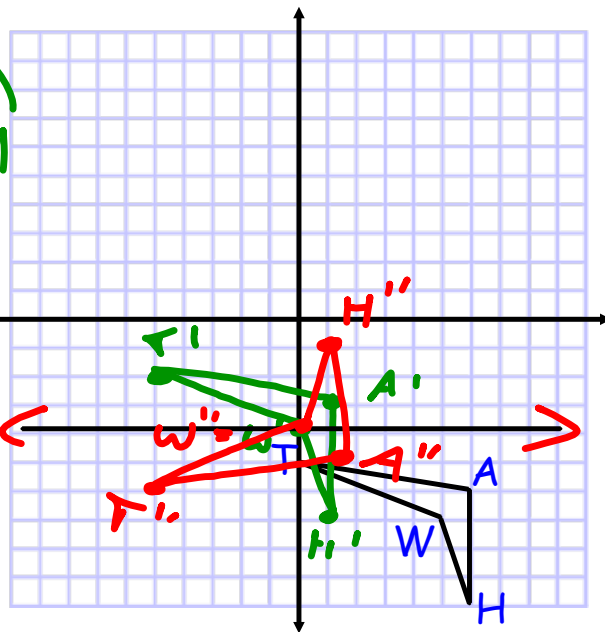
3) Graph $\triangle REX$ with $R(-4,-1)$, $E(-7,-3)$, and $X(-5,-9)$. Reflect over the line $x=-1$, then rotate 180° about the origin.

4) Graph quadrilateral HDTV with $H(-5,3)$, $D(-4,-4)$, $T(-2,-5)$, and $V(-1,-1)$. Dilate with scale factor 2, then reflect over the y -axis.

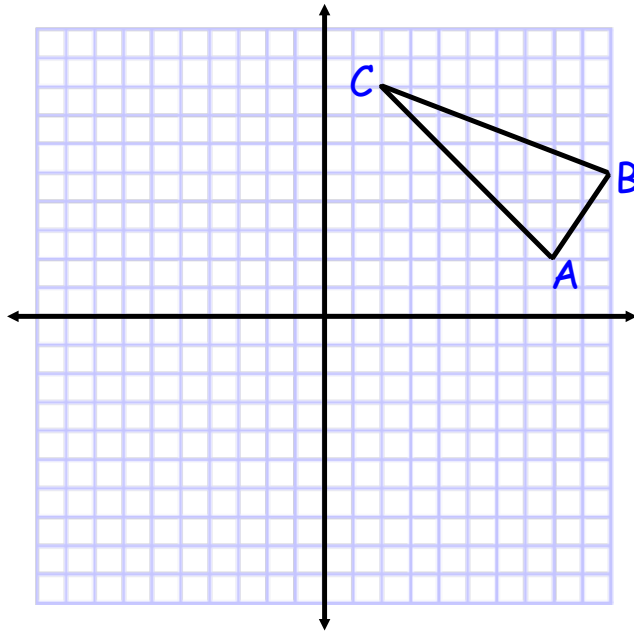
1) Graph quadrilateral WHAT with $W(5,-7)$, $H(6,-10)$, $A(6,-6)$, and $T(0,-5)$. Translate using the rule $(x,y) \rightarrow (x-5,y+3)$, then reflect over the line $y=-4$.

$W'(0,-4)$
 $H'(1,-7)$
 $A'(1,-3)$
 $T'(-5,-2)$

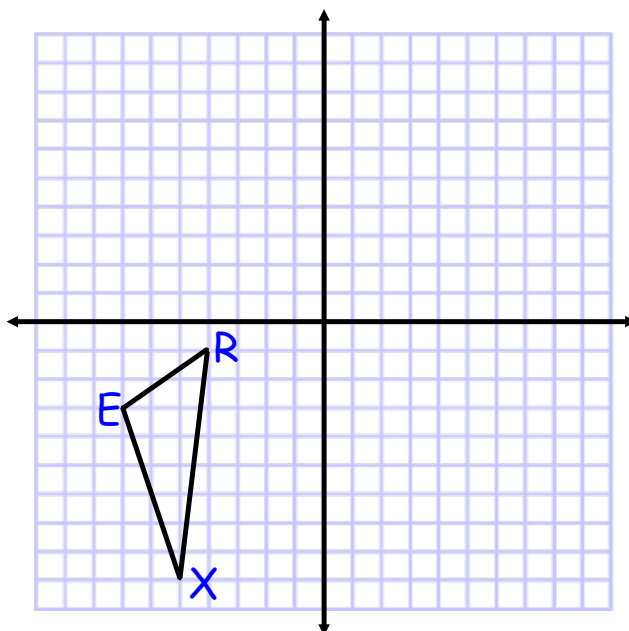
$W''(0,-4)$
 $H''(1,-1)$
 $A''(1,-5)$
 $T''(-5,6)$



2) Graph $\triangle ABC$ with $A(8,2)$, $B(10,5)$, and $C(2,8)$. Rotate 270° about the origin, then dilate with scale factor $1/2$.



3) Graph $\triangle REX$ with $R(-4,-1)$, $E(-7,-3)$, and $X(-5,-9)$. Reflect over the line $x=-1$, then rotate 180° about the origin.



4) Graph quadrilateral HDTV with $H(-5,3)$, $D(-4,-4)$, $T(-2,-5)$, and $V(-1,-1)$. Dilate with scale factor 2, then reflect over the y -axis.

