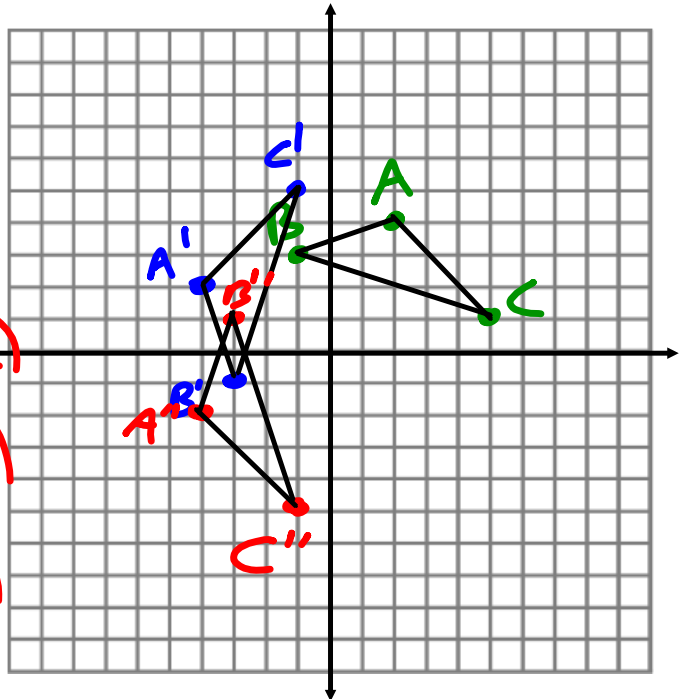


Graph triangle ABC with vertices $A(2,4)$, $B(-1,3)$, and $C(5,1)$.

1) Rotate the figure 90° about the origin.

2) Reflect the image ($A'B'C'$) over the x-axis. Label the new figure $A''B''C''$.

$$\begin{array}{ll} A'(-4, 2) & A''(-4, -2) \\ B'(-3, -1) & B''(-3, 1) \\ C'(-1, 5) & C''(-1, -5) \end{array}$$



How to do multiple transformations...

- Do one transformation after the other. Perform the first transformation on the original shape, perform the second transformation on the image from the first transformation (not the original shape).
- Label the image after the first transformation with primes. Label the image after the second transformation with double primes.

Systems of Equations Assessment

$$\textcircled{1} \quad 2a + b = 4$$

$$b = 1 - a$$

$$\underline{2a} + 1 - \underline{a} = 4$$

$$\underline{a} + 1 = 4$$

$$\underline{\quad} - 1 \quad - 1$$
$$a = 3$$

$$1 - 3 = -2$$

$$a = 3$$

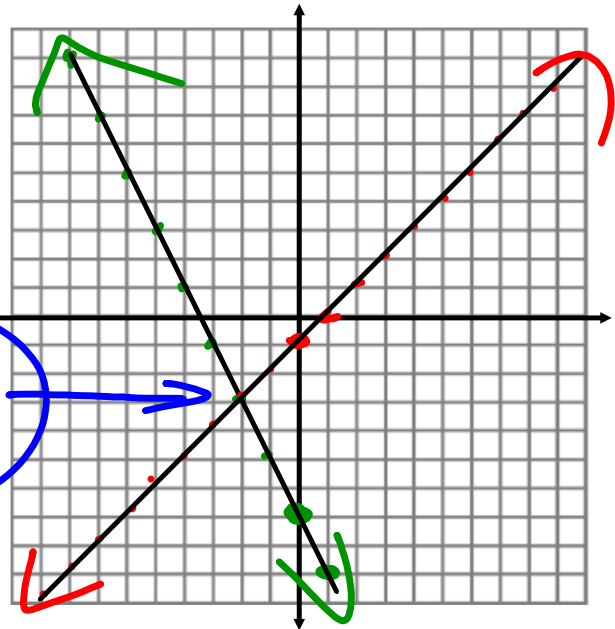
$$b = -2$$

G

$$y = -2x - 7$$

$$y = x - 1$$

$(-2, -3)$



(2)

$$3(2w - 3z) = (-1)3$$

$$2(3w + 4z) = (24)2$$

$$6w - 9z = -3$$

$$-(6w + 8z = 48)$$

$$\frac{-17z = -51}{-17} = \frac{-51}{-17} \quad z = 3$$

$$2w - 3(3) = -1$$

$$2w - 9 = -1$$

$$+9 \quad +9$$

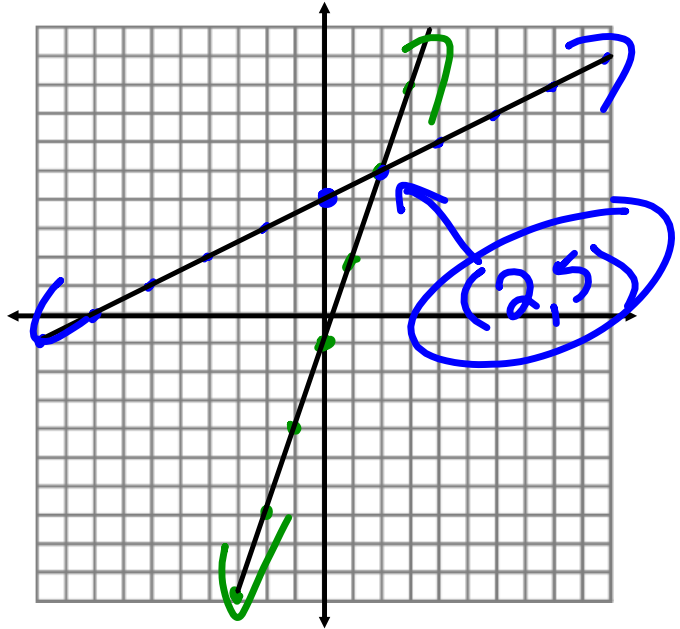
$$\frac{2w = 8}{2} = \frac{8}{2}$$

$$w = 4$$

$$w = 4$$

$$z = 3$$

$$\begin{aligned} \textcircled{4} \quad & y = 3x - 1 \\ & x - 2y = -8 \\ & \begin{array}{r} -x \qquad \qquad -x \\ \hline -2y = -x - 8 \\ \hline \frac{-2y}{-2} = \frac{-x - 8}{-2} \\ \hline y = \frac{1}{2}x + 4 \end{array} \end{aligned}$$



$$\textcircled{Q} \quad 4x + 10y = 14$$
$$2(2x + 5y) = (7)2$$

$$\begin{array}{r} \cancel{4x + 10y} = 14 \\ - (\cancel{4x + 10y} = 14) \\ \hline \end{array}$$

$$0 = 0$$

infinitely many solutions

$$\textcircled{11} 4(m + b) = (11)4$$

$$6m + 4b = 50$$

$$\begin{array}{r} 3 + b = 11 \\ -3 \quad -3 \\ \hline b = 8 \end{array}$$

$$\begin{array}{r} 4m + 4b = 44 \\ - (6m + 4b = 50) \\ \hline \end{array}$$

$$\begin{array}{r} -2m = -6 \\ \hline -2 \quad -2 \\ \hline m = 3 \end{array}$$

3 gallons of milk
8 loaves of bread

$$\textcircled{10} \quad 4m + 6s = 24$$

$$3(3m + 2s) = (13) \cdot 3$$

$$\begin{array}{r} 4m + 6s = 24 \\ -(9m + 6s = 39) \\ \hline \end{array}$$

$$\begin{array}{r} -5m = -15 \\ \hline \end{array}$$

$$\begin{array}{r} -5 \quad -5 \\ \hline \end{array}$$

$$m = 3$$

$$3(3) + 2s = 13$$

$$9 + 2s = 13$$

$$\begin{array}{r} -9 \quad -9 \\ \hline \end{array}$$

$$2s = 4$$

$$\begin{array}{r} 2 \quad 2 \\ \hline \end{array}$$

$$s = 2$$

mugs \rightarrow \$3

spoons \rightarrow \$2

②

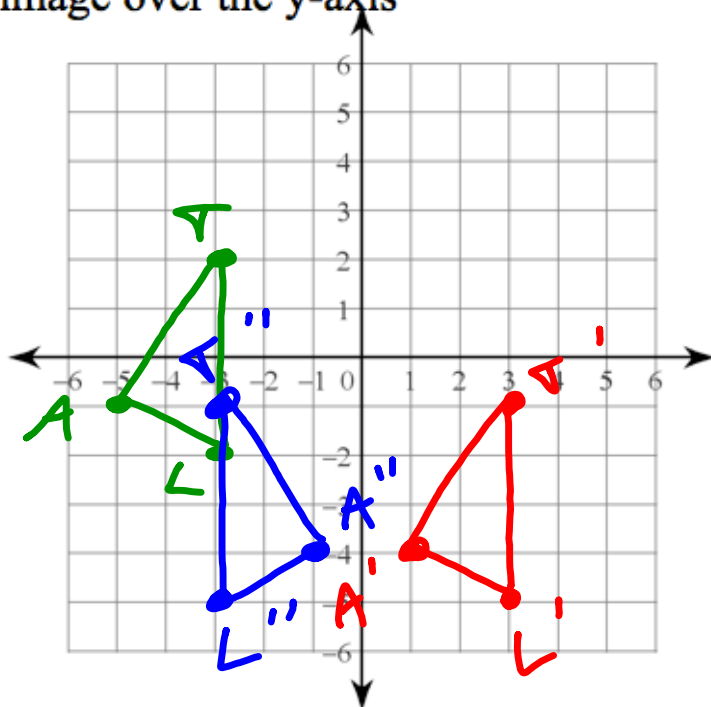
$$\begin{array}{r} x + 3y = 2 \\ - (2x + 3y = 7) \\ \hline -x = -5 \\ \hline x = 5 \end{array}$$

$x = 5$

$$\begin{array}{r} 5 + 3y = 2 \\ -5 \\ \hline 3y = -3 \\ \hline y = -1 \end{array}$$

$x = 5$
 $y = -1$

Translate $\triangle ALT$ if $A(-5,-1)$, $L(-3,-2)$, $T(-3,2)$
 by the rule $(x,y) \rightarrow (x+6, y-3)$, then reflect the
 image over the y-axis



$$A' (1, -4)$$

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

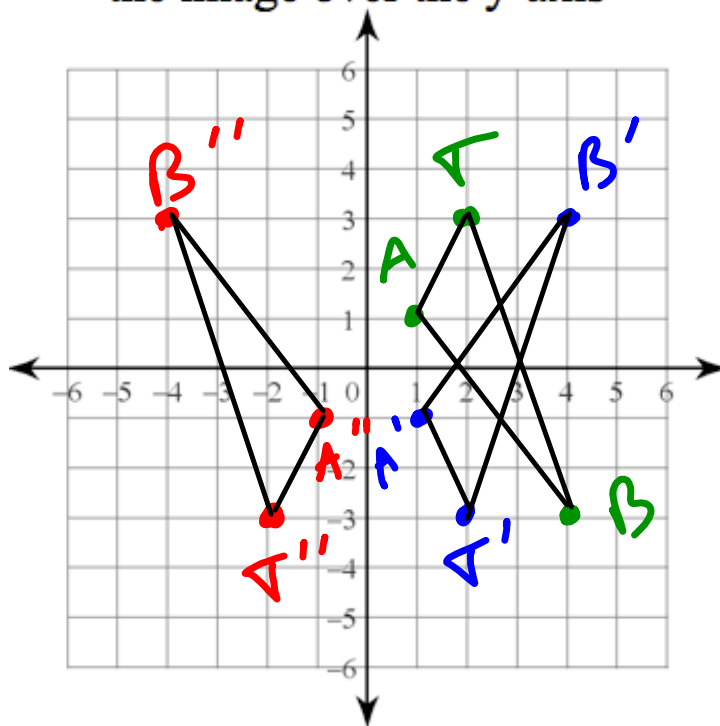
$$T' (3, -1)$$

$$A'' (-1, -4)$$

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

$$T'' (-3, -1)$$

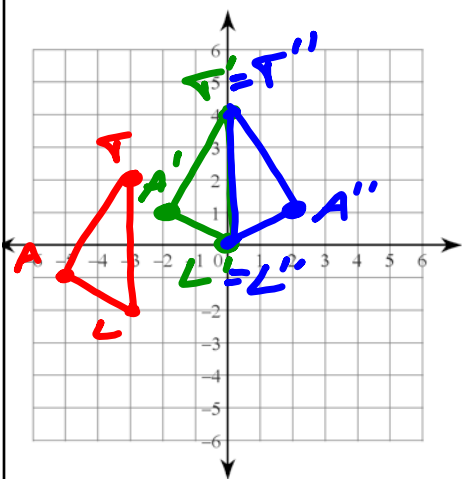
Reflect $\triangle TAB$ if $T(2,3)$, $A(1,1)$,
and $B(4,-3)$ over the x-axis, then reflect
the image over the y-axis



$T'(2, -3)$
 $A'(1, -1)$
 $B'(4, 3)$

$T''(-2, -3)$
 $A''(-1, -1)$
 $B''(-4, 3)$

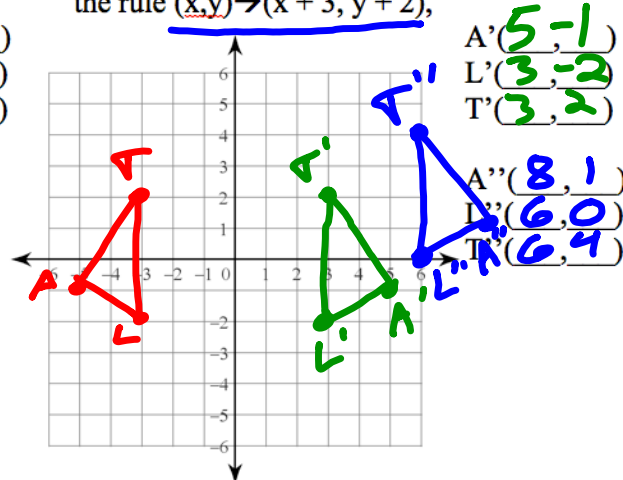
Translate $\triangle ALT$ if $A(-5,-1)$, $L(-3,-2)$, $T(-3,2)$
 by the rule $(x,y) \rightarrow (x+3, y+2)$, then reflect
 the image over the y-axis



$$\begin{matrix} A' & (-2, 1) \\ L' & (-3, 0) \\ T' & (-3, 4) \end{matrix}$$

$$\begin{matrix} A'' & (2, 1) \\ L'' & (3, 0) \\ T'' & (3, 4) \end{matrix}$$

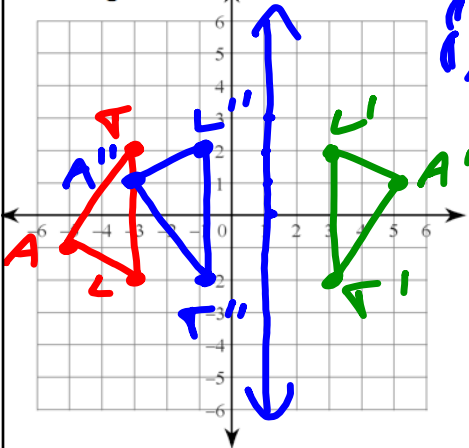
Reflect $\triangle ALT$ if $A(-5,-1)$, $L(-3,-2)$, $T(-3,2)$
 over the y-axis, then translate the image by
 the rule $(x,y) \rightarrow (x+3, y+2)$,



$$\begin{matrix} A' & (5, -1) \\ L' & (3, -2) \\ T' & (3, 2) \end{matrix}$$

$$\begin{matrix} A'' & (8, 1) \\ L'' & (6, 0) \\ T'' & (6, 4) \end{matrix}$$

Rotate $\triangle ALT$ if $A(-5,-1)$, $L(-3,-2)$, $T(-3,2)$,
 180° about the origin, then reflect
the image over the line $x = 1$

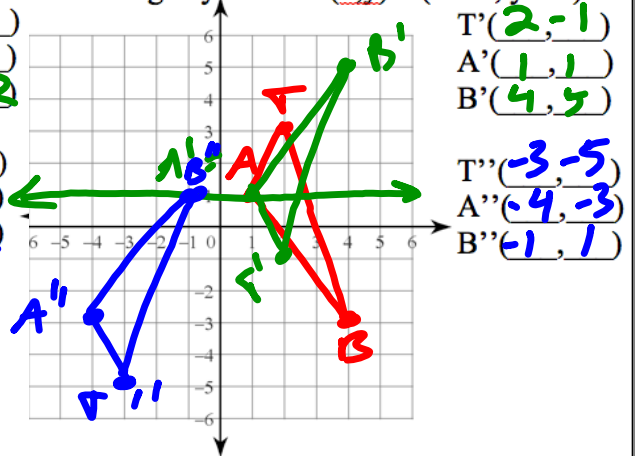


$(1, 0)$
 $(1, 1)$
 $(1, 2)$
 $(0, 3)$

$A' (5, 1)$
 $L' (3, 2)$
 $T' (3, -2)$

$A'' (-3, 1)$
 $L'' (-1, 2)$
 $T'' (-1, -2)$

Reflect $\triangle TAB$ if $T(2,3)$, $A(1,1)$,
and $B(4,-3)$ over the line $y = 1$, then translate
the image by the rule $(x, y) \rightarrow (x - 5, y - 4)$



$T' (2, -1)$
 $A' (1, 1)$
 $B' (4, 4)$

$T'' (-3, -5)$
 $A'' (-4, -3)$
 $B'' (-1, 1)$

