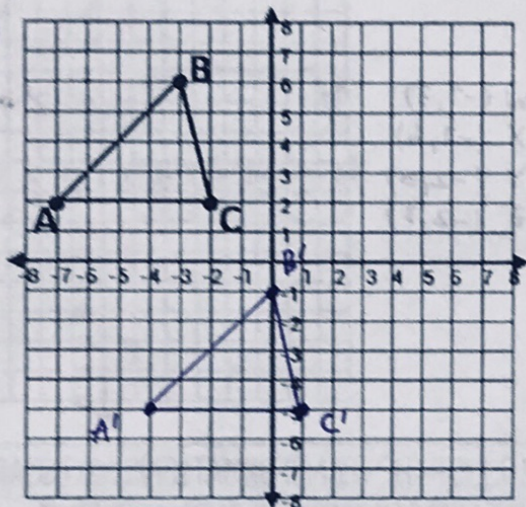


Answer Key

1. TRANSLATE THE FIGURE 3 UNITS RIGHT AND 7 UNITS DOWN. **RECORD** THE COORDINATES OF THE IMAGE. WRITE THE **ALGEBRAIC EXPRESSION** OF THE TRANSLATION.

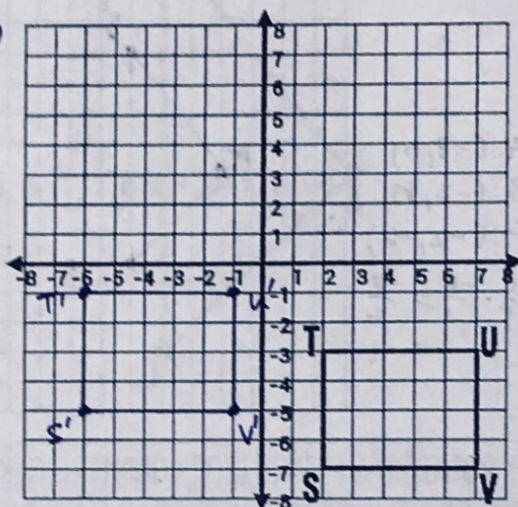
$A' (-4, -5)$
 $B' (0, -1)$
 $C' (1, -5)$

$$(x, y) \rightarrow (x+3, y-7)$$



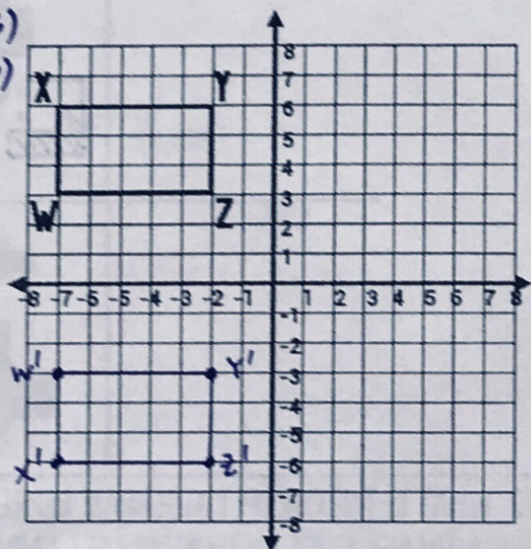
2. TRANSLATE $(x, y) \rightarrow (x-8, y+2)$. **RECORD** THE COORDINATES OF THE IMAGE.

$S' (-6, -5)$
 $T' (-6, -1)$
 $U' (-1, -1)$
 $V' (-1, -5)$



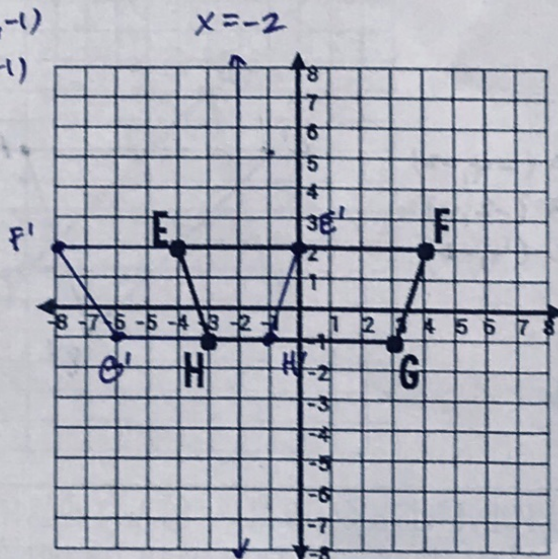
3. REFLECT THE FIGURE OVER THE X-AXIS. **RECORD** THE COORDINATES OF THE IMAGE.

$W' (-7, -3)$
 $X' (-7, -6)$
 $Y' (-2, -3)$
 $Z' (-2, -6)$



4. REFLECT THE FIGURE OVER THE $x = -2$. **RECORD** THE COORDINATES OF THE IMAGE.

$E' (0, 2)$
 $F' (-8, 2)$
 $G' (-6, -1)$
 $H' (-1, -1)$



5. THE COORDINATES BELOW REPRESENT A TRIANGLE THAT WAS DILATED.

$J(-3, -12) \rightarrow J'(-2, -8)$
 $K(-6, -15) \rightarrow K'(-4, -10)$
 $L(-9, -12) \rightarrow L'(-6, -8)$

$$\frac{\text{new}}{\text{old}} = \frac{-2}{-3} = \frac{2}{3}$$

WHAT IS THE SCALE FACTOR USED IN THE DILATION?

$\frac{2}{3}$

6. FOR QUESTION #2, MARK THE STATEMENTS AS TRUE OR FALSE.

F THE PRE-IMAGE IS LOCATED IN QUADRANT III.

T THE PRE-IMAGE AND IMAGE ARE CONGRUENT FIGURES.

7. DILATE THE FIGURE BY A SCALE FACTOR OF $\frac{1}{2}$. RECORD THE COORDINATES OF THE IMAGE.

$A' (-4, 0)$

$\frac{1}{2} \cdot \frac{-2}{1} = \frac{-2}{2} = -1$

$B' (-1, 4)$

$\frac{1}{2} \cdot \frac{-6}{2} = \frac{-6}{4} = -3$

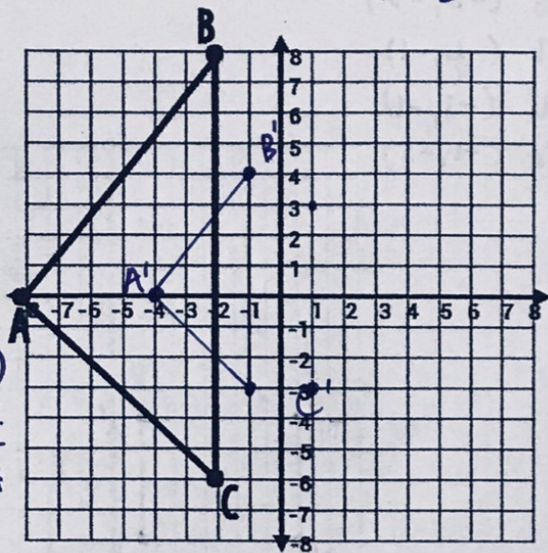
$C' (-1, -3)$

$A (-8, 0)$

$B (-2, 8)$

$C (-2, -6)$

$\frac{1}{2} \cdot \frac{-8}{2} = \frac{-8}{4} = -2$



8. ROTATE THE FIGURE 90° CLOCKWISE ABOUT THE ORIGIN. RECORD THE COORDINATES OF THE IMAGE.

$W' (3, 7)$

$X' (6, 7)$

$Y' (6, 2)$

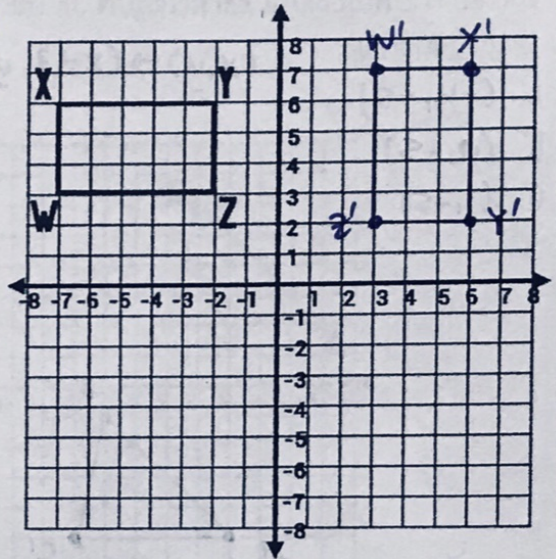
$Z' (3, 2)$

$W (-7, 3)$

$X (-7, 6)$

$Y (-2, 6)$

$Z (-2, 3)$



9. ROTATE THE FIGURE 180° COUNTERCLOCKWISE ABOUT THE ORIGIN. RECORD THE COORDINATES OF THE IMAGE.

$A' (4, 2)$

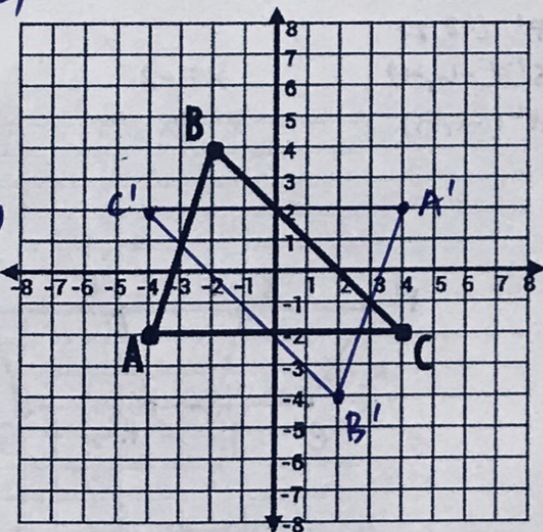
$B' (2, -4)$

$C' (-4, 2)$

$A (-4, -2)$

$B (-2, 4)$

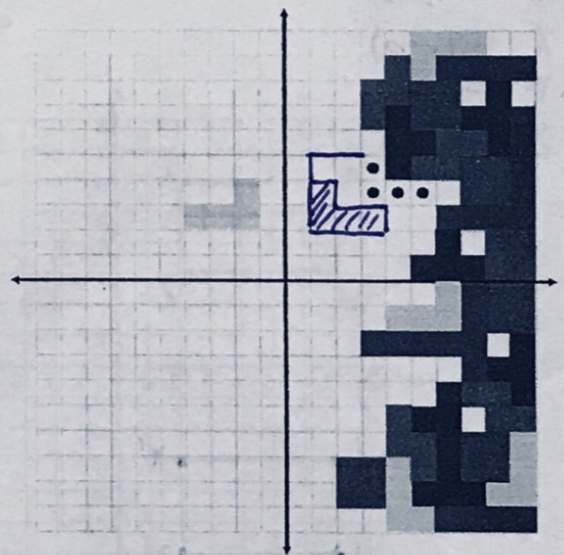
$C (4, -2)$



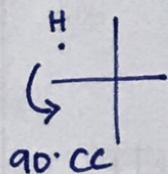
10. LIST THE TRANSFORMATIONS NECESSARY TO MOVE THE L-BLOCK INTO THE INDICATED SPOT.

① Reflect across y-axis.

② Translate $(x, y) \rightarrow (x+2, y+1)$.



11. POINT H IS LOCATED AT $(-7, 5)$. WHERE IS H' AFTER A 270° CLOCKWISE ROTATION ABOUT THE ORIGIN?



$H' (-5, -7)$

12. WHAT IS THE CORRECT ALGEBRAIC REPRESENTATION FOR A TRANSLATION OF 5 UNITS LEFT AND 9 UNITS UP?

$(x, y) \rightarrow (x-5, y+9)$