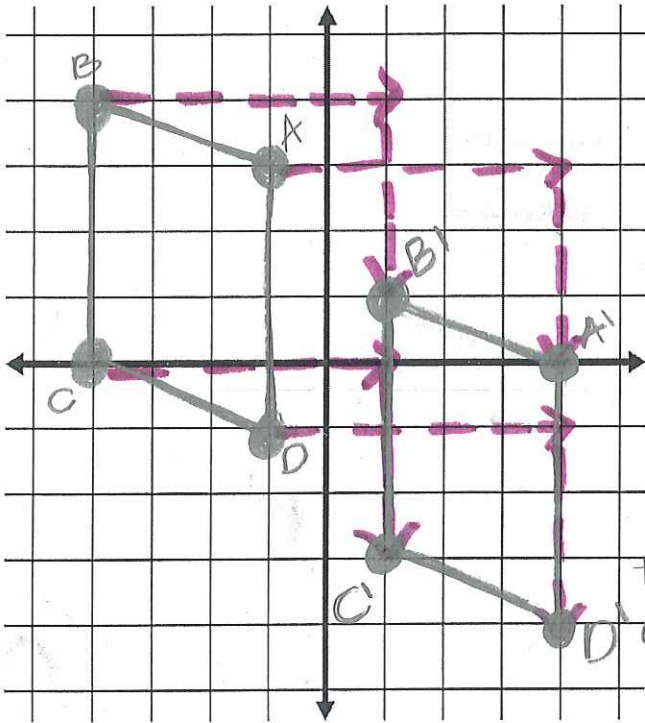


Translations Notes and Practice



Step 1: Draw a parallelogram on the coordinate plane so that points A, B, and D are in quadrant II and point C is in quadrant III. Label the vertices ABCD.

Step 2: Slide your parallelogram over 5 units to the right and 3 units down.

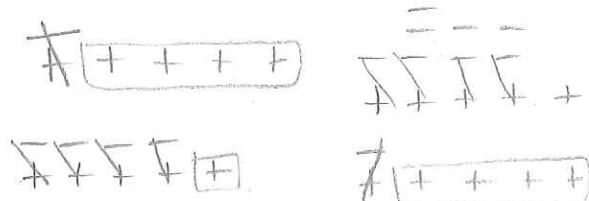
Step 3: Trace the parallelogram in its new position and label the vertices A'B'C'D'.

Step 4: Draw the horizontal and vertical path between corresponding vertices. Write a sentence about what you notice?

When move each coordinate the same distance & same direction, we get a NEW congruent figure.

Step 5: Record the coordinates of ABCD. *(x+5 → y-3)*

A	(-1, 3)	-1+5=4	3-3=0	A'	(4, 0)
B	(-4, 4)	-4+5=1	4-3=1	B'	(1, 1)
C	(-4, 0)	-4+5=1	0-3=-3	C'	(1, -3)
D	(-1, -1)	-1+5=4	-1-3=-4	D'	(4, -4)

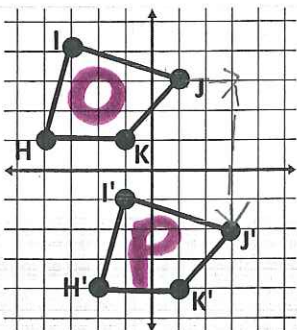


Step 6: Add 5 to each x-coordinate of the vertices from the original figure. Then subtract 3 from each y-coordinate of the vertices of the original figure. Write a sentence about what you notice.

(7th-grade)
 TRANSLATION (SLIDE)

When you move a figure without turning it, the motion is a TRANSLATION (SLIDE).
 When you are transferring a figure, every point of the original figure is moved the same distance and in the same direction.

Graph a Translation



List the coordinates of:

H (-4, 1) I (-3, 4) J (1, 3) K (-1, 1)

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

We moved each vertex 2 units right and 5 units down. We labeled the new vertices H', I', J', and K', to represent the translation.

What process represents this translation? (x+2 → y-5)

Now try this—Translate quadrilateral HIJK 1 unit up and 4 units to the right. What process represents this translation? _____

When a figure is translated, the original and the translated figures are CONGRUENT. Congruent figures have the same size and shape, and corresponding sides and angle that have equal measure.

Find the Coordinates of a Translation

A POSITIVE integer describes a translation right or up on a coordinate plane.

A NEGATIVE integer describes a translation left or down on a coordinate plane.

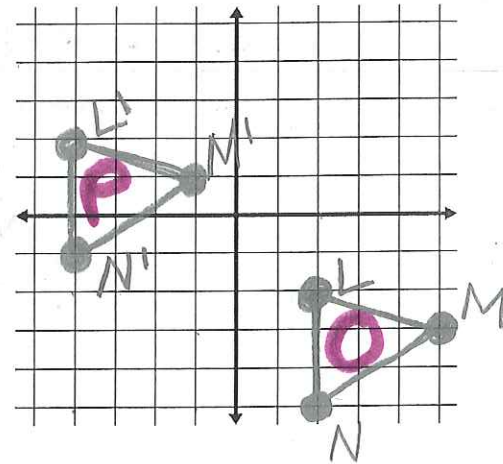


Let's Practice!!

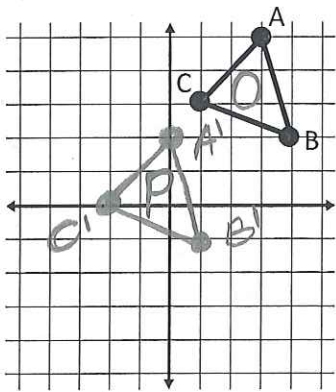
1. The vertices for $\triangle LMN$ are listed in the table below. Use the middle column to find the vertices of $\triangle L'M'N'$ after the translation of 6 units left and 4 units up.

Vertices of $\triangle LMN$	Process ($x-6 \rightarrow y+4$)	Vertices of $\triangle L'M'N'$
L(2, -2) ✓	$2-6 = -4$ $-2+4 = 2$	L' (-4, 2)
M(5, -3) ✓	$5-6 = -1$ $-3+4 = 1$	M' (-1, 1)
N(2, -5) ✓	$2-6 = -4$ $-5+4 = -1$	N' (-4, -1)

Graph the original!
* Give the process
* Identify the prime points.



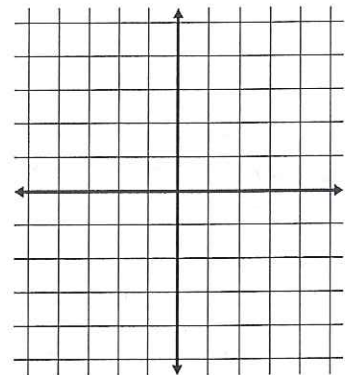
1. Translate $\triangle ABC$ 3 units left and 3 units down. Graph $\triangle A'B'C'$.



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

Process ($x-3, y-3$)

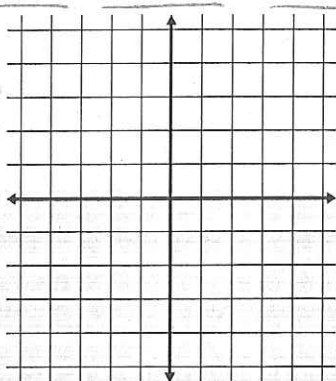
2. Quadrilateral DEFG has vertices D(-3, 0), E(-1, -2), F(-3, -5), G(-5, -3). Graph the original figure and the translation at 4 units right and 5 units up.



D' _____
E' _____
F' _____
G' _____

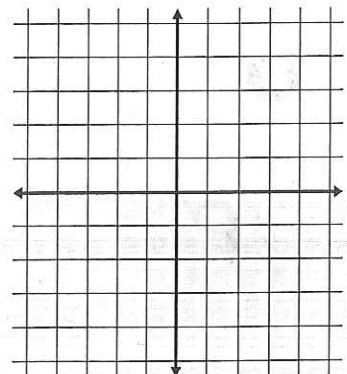
Process (x, y)

3. Triangle HIJ has vertices H(-1, 0), I(1, -3), and J(-2, -4). Translate using the process, ($x-2, y+4$).



H' _____
I' _____
J' _____

4. Rectangle KLMN has vertices K(1, -1), L(1, 1), M(5, 1) and N(5, -1). Translate using the process, ($x-5, y-4$)



K' _____
L' _____
M' _____
N' _____

HOMEWORK 11/13