Enhanced Mid-Topic Assessment

Name _____ Date _____

Part A: Multiple-Choice Questions

1. Elisa drew a triangle with coordinates (2, 4), (5, 3), and (7, 2). She drew an image of the triangle with coordinates (–1, 4), (2, 3), and (4, 2). Which rule best describes the transformation?

a. $(x, y) \rightarrow (x - 5, y)$

b. $(x, y) \rightarrow (x + 3, y)$

c. $(x, y) \rightarrow (x + 2, y)$

d. $(x, y) \rightarrow (x - 3, y)$

2. Victor drew a square with vertices at (1, 2), (3, 2), (3, 4), and (1, 4). He slides the square 5 units up to create an image. What are the vertices of the image and the algebraic rule?

a. (6, 2), (8, 2), (8, 4), and (6, 4); $(x + 5, y)$

b. (1, 7), (3, 7), (3, 9), and (1, 9); $(x, y + 5)$

c. (1, –3), (3, –3), (3, –1), and (1, -1); $(x, y - 5)$

d. (1, –2), (3, –2), (3, –4), and (1, –4); $(x, -y)$

3. Noah draws triangle ABC. Then, he translates that triangle using the rule $(x + 2, y - 1)$ to create triangle $A'B'C'$. The measure of $\angle A$ is 60 degrees. What is the measure of $\angle A'$ in degrees?

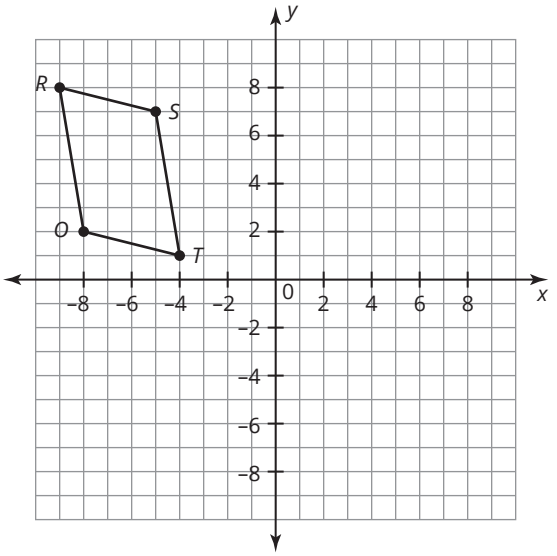
a. 59°

b. 60°

c. 62°

d. 6 cm

4. Parallelogram $RSOT$ is translated 4 units down and 5 units to the left to form parallelogram $R'S'O'T'$.



Which statement is true?

a. Each side length of parallelogram $RSOT$ is 2 times the corresponding side length of parallelogram $R'S'O'T'$.

b. The sum of the angle measures of parallelogram $RSOT$ is greater than the sum of the angle measures of parallelogram $R'S'O'T'$.

c. Each side length of parallelogram $RSOT$ is $\frac{1}{2}$ times the corresponding side length of parallelogram $R'S'O'T'$.

d. Parallelogram $RSOT$ is congruent to parallelogram $R'S'O'T'$.

5. Which transformation preserves congruence?

a. rotation

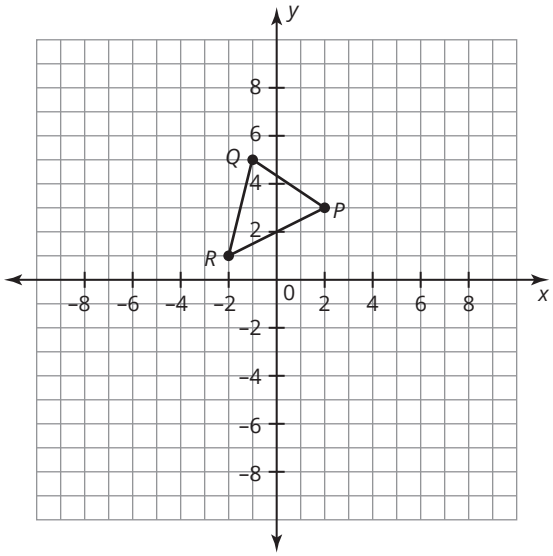
b. reflection

c. translation

d. all of the above

Part B: Open-Response Questions

6. Look at the triangle shown on the coordinate plane.



If you were to translate triangle *PQR* 8 units to the left and 3 units down to form triangle *UVW*, what would be the ordered pairs of the corresponding vertices? Write the algebraic rule for the transformation.

7. Marcus drew rectangle *EFGH*. Then, he drew a translation of it using the rule $(x, y - 16)$ to create rectangle *E'F'G'H'*. Line segment *GH* is 5 inches. The distance from *E* to *E'* is 8 inches.

a. How long is $\overline{G'H'}$? Explain your reasoning.

b. Suppose Marcus draws $\overline{GG'}$. What is the length of $\overline{GG'}$? Explain your reasoning.

8. Triangle *DEF* has vertices *D* (2, 4), *E* (3, 7), and *F* (6, 5). Triangle *DEF* was translated 3 units to the left and 2 units down to form Triangle *D′E′F′*.

a. What rule describes the translation applied to triangle *DEF* to create triangle *D′E′F′*?

b. What are the coordinates of the vertices of triangle *D′E′F′*?

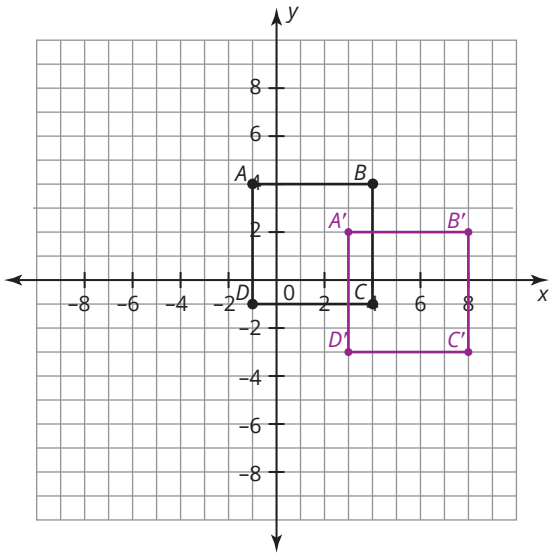
9. Complete the table below with the coordinates of the points provided given the transformation described.

Original Point	Translation 5 units left and 3 units up
(2, 5)	
(4, 0)	
(−4, 3)	
(2, −8)	
(*x*, *y*)	

Part C: Griddable Response Questions

Record your answers and fill in the bubbles. Be sure to use the correct place value.

10. Square *ABCD* was transformed to create Square *A′B′C′D′*.



If the transformation is represented by the rule $(x, y) \rightarrow (x + a, y + b)$ what is the value of b?

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+	0	0	0	0		0	0
−	1	1	1	1		1	1
	2	2	2	2		2	2
	3	3	3	3		3	3
	4	4	4	4		4	4
	5	5	5	5		5	5
	6	6	6	6		6	6
	7	7	7	7		7	7
	8	8	8	8		8	8
	9	9	9	9		9	9