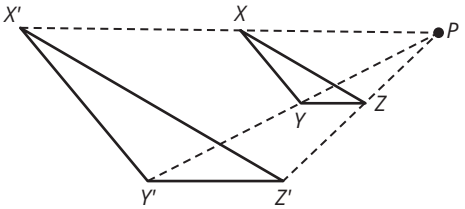
Enhanced End of Topic Assessment

Name _____ Date _____

Part A: Multiple-Choice Questions

1. Triangle XYZ has been enlarged with P as the center of dilation to form triangle $X'Y'Z'$.



Which conclusion is correct?

a. $\frac{XY}{X'Y'} = \frac{YZ}{Y'Z'} = \frac{XZ}{X'Z'}$

b. $\Delta X'Y'Z' \cong \Delta XYZ$

c. $\frac{YZ}{Y'Z'} = \frac{XZ}{X'Y'} = \frac{XY}{X'Z'}$

d. $X'X = Y'Y = Z'Z$

2. Which transformation does **NOT** preserve congruence?

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

b. $(x, y) \rightarrow (x - 5, y + 2)$

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

d. $(x, y) \rightarrow (2x, 2y)$

3. A trapezoidal door mat is similar in shape to a trapezoidal rug. Each dimension of the door mat is $\frac{1}{3}$ the size of the rug. Which statement is true?

a. The area of the door mat is $\frac{1}{6}$ the area of the rug.

b. The area of the door mat is $\frac{1}{9}$ the area of the rug.

c. The perimeter of the door mat is $\frac{1}{6}$ the perimeter of the rug.

d. The perimeter of the door mat is $\frac{1}{9}$ the perimeter of the rug.

4. A polygon is graphed on a coordinate plane with (x, y) representing the location of a certain point on the polygon. The polygon is transformed using the rule $(x, y) \rightarrow (ax, ay)$. Which statement must **NOT** be true?

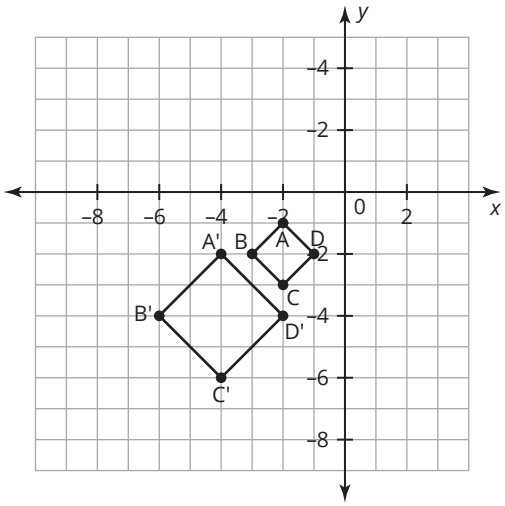
a. If a is greater than 1, the image of the polygon is larger than the original polygon.

b. If a is between 0 and 1, the image of the polygon is smaller than the original polygon.

c. If a is greater than 1, the image of the polygon is smaller than the original polygon.

d. If a is equal to 1, the image of the polygon is congruent to the original polygon.

5. Quadrilateral *ABCD* is dilated with the origin as the center of dilation to create quadrilateral $A'B'C'D'$.



Which rule best represents this transformation?

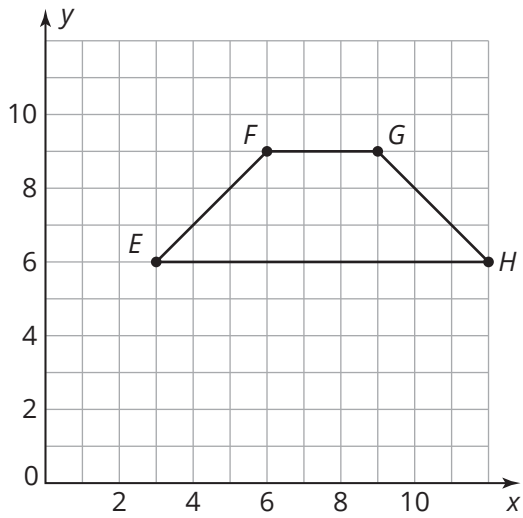
a. $(x, y) \rightarrow \left(\frac{1}{2}x, \frac{1}{2}y\right)$

b. $(x, y) \rightarrow (3x - 5, 3y - 5)$

c. $(x, y) \rightarrow \left(x, \frac{5}{2}y\right)$

d. $(x, y) \rightarrow (2x, 2y)$

6. Trapezoid *EFGH* is transformed according to the rule $(x, y) \rightarrow \left(\frac{1}{3}x, \frac{1}{3}y\right)$ to create trapezoid $E'F'G'H'$.



Which statement is true?

a. The side lengths of trapezoid $E'F'G'H'$ are three times the corresponding side lengths of trapezoid *EFGH*.

b. The angle measures of trapezoid $E'F'G'H'$ are greater than the corresponding angle measures in trapezoid *EFGH*.

c. The side lengths of trapezoid $E'F'G'H'$ are $\frac{1}{3}$ times the corresponding side lengths of trapezoid *EFGH*.

d. The angle measures of trapezoid $E'F'G'H'$ are less than the corresponding angle measures of quadrilateral *EFGH*.

Part B: Open-Response Questions

7. Suppose that Δ*FUN* is similar to Δ*TIP*.

a. Identify the corresponding sides.

b. State the relationship between the lengths of the corresponding sides.

8. Rectangle *QRST* has coordinates *Q*(–8, 5), R(–8, 7), S(–5, 7), and T(–5, 5). Dilate the rectangle by a scale factor of 4 with a center of dilation at the origin. Write a rule to describe this transformation and use the rule to determine the coordinates of rectangle $Q'R'S'T'$.

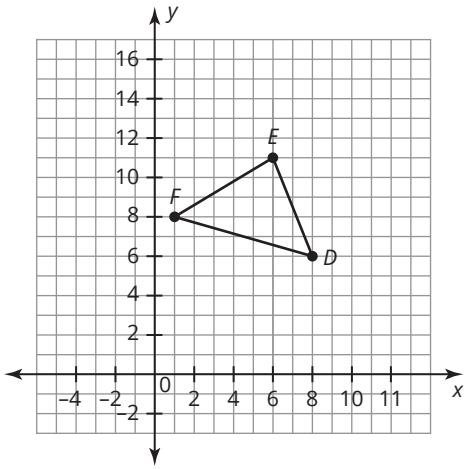
9. A trapezoid has coordinates *F* (–9, 6), *G* (–6, 9), *H* (–3, 9), and *I* (0, 6).

a. Dilate the trapezoid by a scale factor of $\frac{1}{3}$ with a center of dilation at the origin. Write a rule to describe this transformation and use the rule to determine the coordinates of trapezoid $F'G'H'I'$.

b. Is the dilation a reduction or an enlargement? Explain your reasoning.

10. ΔFED has vertices with coordinates F (1, 8), E (6, 11), and D (8, 6).

a. Dilate ΔFED using the origin as the center of dilation and a scale factor of $\frac{1}{2}$ to form ΔKIT and write the algebraic rule to describe this transformation.



b. Is the dilation an enlargement or a reduction? Explain your reasoning.

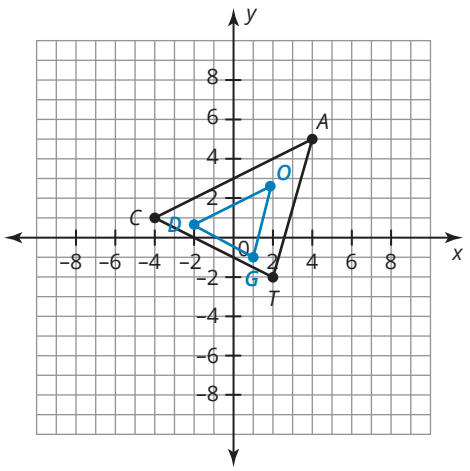
c. What is the relationship between ΔFED and ΔKIT? Explain your reasoning.

d. Describe the perimeter and area of ΔKIT in relation to ΔFED.

Part C: Griddable Response Questions

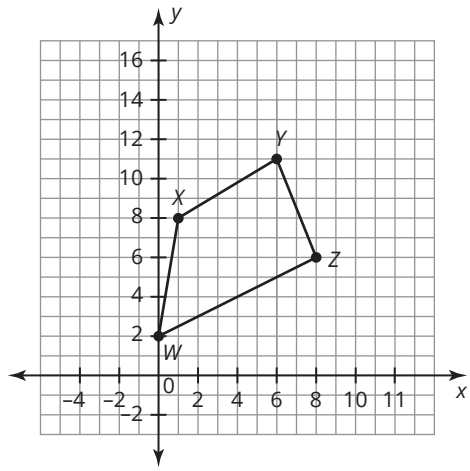
Record your answers and fill in the bubbles. Be sure to use the correct place value.

11. Δ*CAT* is dilated using the origin as the center of dilation to form Δ*DOG*. What is the scale factor?



					.		
+	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

12. Quadrilateral *WXYZ* is shown on the coordinate grid. It will be dilated with the origin as the center of dilation using the rule $(x, y) \rightarrow (ax, ay)$ to create quadrilateral $W'X'Y'Z'$. If vertex *Y'* will be located at (9, 16.5), what is the value of the scale factor *a*?



					.		
+	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