B-ASSESSMENT REVIEW: Module 1 Topic 2 – Similarity
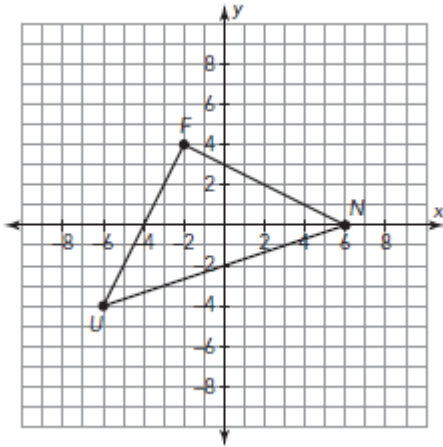
1	Triangle *FUN* has vertices with coordinates F(-2, 4), U(-6, -4), and N(6, 0).

a. Dilate $\triangle FUN$ using the origin as the center of dilation and a scale factor of 0.5 to form $\triangle F'U'N'$.

b. List the coordinates of the dilated image?

c. Explain the process you used to determine the coordinates of the dilated image.

| 2	BELOW IS A PICTURE OF THE PRE IMAGE TRIANGLE BOT AND ITS DILATED IMAGE, TRIANGLE B'O'T'. WITHOUT CALCULATING THE SCALE FACTOR,
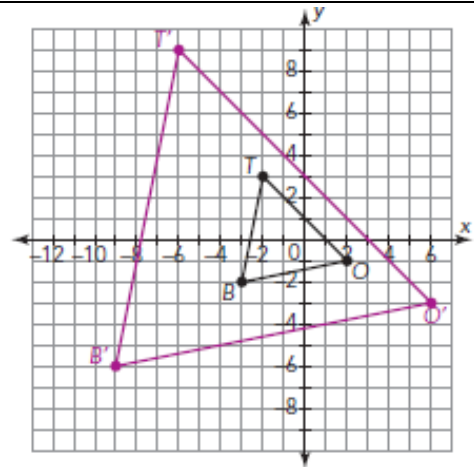
a. EXPLAIN IF THE DILATION IS AN ENLARGEMENT OR A REDUCTION.
THE DILATION IS _____
because _____
_____.

b. BASED ON YOUR ANSWER ABOVE, WHAT MUST BE TRUE ABOUT THE SCALE FACTOR?

A) THE SCALE FACTOR IS NEGATIVE
B) THE SCALE FACTOR IS BETWEEN -1 AND 1
C) THE SCALE FACTOR IS GREATER THAN 1
D) THE SCALE FACTOR IS POSITIVE

3	a. Graph trapezoid (-7, 1), B(-6, 4), C(-4, 4), and D(-5, 1).

b. Dilate Trapezoid ABCD about the origin with a scale factor of $\frac{3}{2}$. What are the coordinates of A', B', C' and D'?
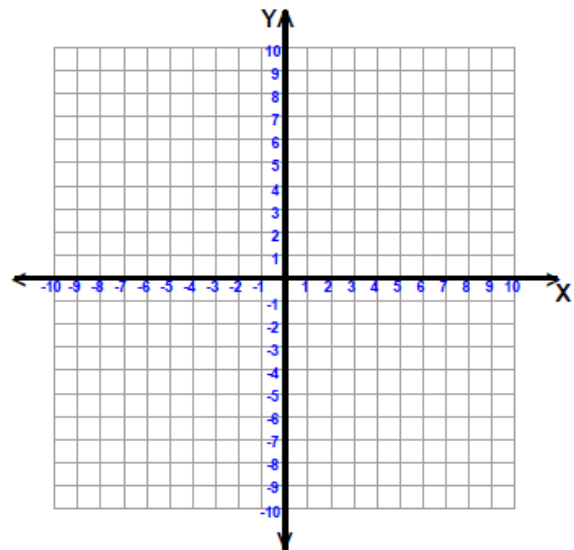
c. On the graph, draw and label trapezoid A"B"C"D" after a translation of A'B'C'D' using the rule $(x, y) \rightarrow (x + 3)$ Find the coordinates of A"B"C"D".
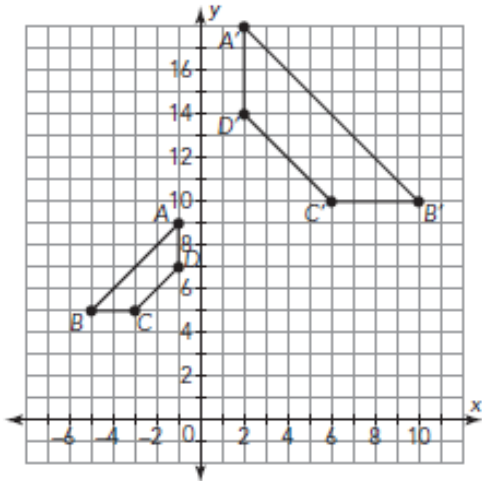
4	Rectangle QRST has coordinates Q(-3, 7), R(-3, 11), S(4, 11), and T(4, 7).	5	Trapezoid FGHI has coordinates F(4, 4), G(4, 8), H(12, 8), and I(12, 4). It is dilated by a scale factor of ¼ with a center of dilation at the origin. What are the coordinates of trapezoid F'G'H'I'?
	a. Dilate the rectangle by a scale factor of 3 with a center of dilation at the origin. What are the coordinates of rectangle Q'R'S'T'? Explain your reasoning.		
	b. Is the dilation a reduction or an enlargement? Explain your reasoning.		

6	Which sequence of transformations shows the similarity between the pair of figures shown below? Select *all* that apply.

a. Dilation with a scale factor of ½.

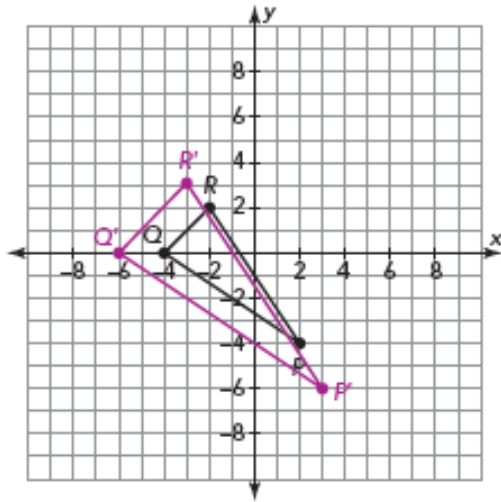b. Reflection over the y-axis.

c. Dilation with a scale factor of 2.

d. Reflection over the x-axis.

7	Name three (3) things you know about dilations?	8	A triangle is dilated with a center of dilation at the origin. Point R is on the figure and R' is the corresponding point on the image of the dilation. Point R is at (6, 4) and R' is at (-12, 8). What is the scale factor?
	1.		
	2.		
	3.		

|			
9	$\triangle PQR$ is transformed to create $\triangle P'Q'R'$. Determine the scale factor? 	**10**	Suppose these statements about two triangles are true: $\angle G \cong \angle S$, $\angle R \cong \angle T$, and $\angle M \cong \angle N$. Which statement is correct? Select **all** that apply. a. The sides are congruent. b. The sides are proportional. c. $\triangle GRM$ is similar to $\triangle NST$ d. $\triangle MGR$ is similar to $\triangle NST$

11 Triangle *ABC* has vertices with coordinates A(-2, -2), B(-6, -2), and C(-6, 2).
a. Dilate $\triangle ABC$ on the coordinate plane using point *A* as the center of dilation and a scale factor of 2 to form $\triangle AB'C'$.
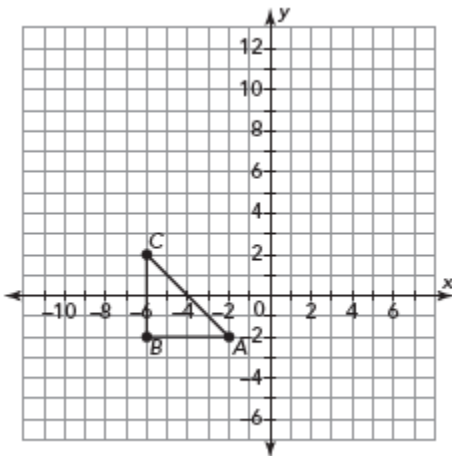
b. What are the coordinates of B' and C'?

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

d. Describe the relationship between the sides of the original triangle, $\triangle ABC$, and the image resulting from the dilation, $\triangle'AB'C'$.

12 Triangle *ABC* has vertices with coordinates A(-1, 1), B(2, 1), and C(2, 3).
a. Dilate $\triangle ABC$ on the coordinate plane using point *D* as the center of dilation and a scale factor of ¼ to form $\triangle A'B'C'$.
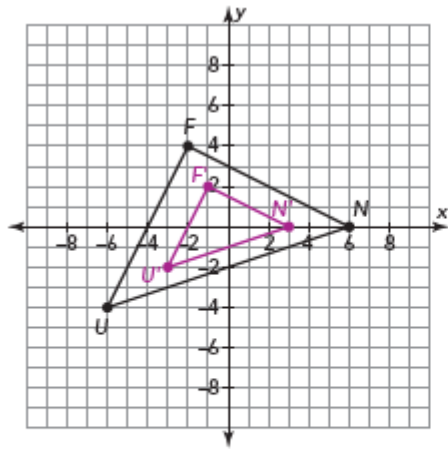b. What are the coordinates of A', B', and C'?

c. Describe the relationship between the corresponding angles of the original triangle, $\triangle ABC$, and the image resulting from the dilation, $\triangle A'B'C'$.

2a.
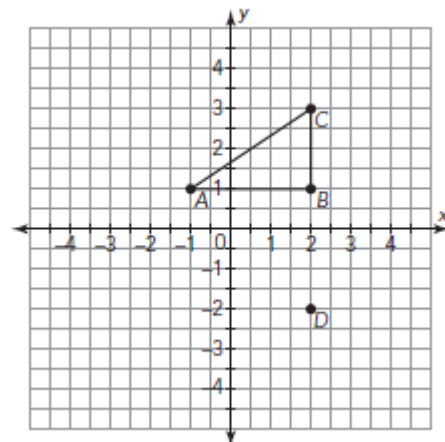
b. The coordinates are F'(−1, 2), U'(−3, −2), and N'(3, 0).

c. I multiplied the coordinates of the vertices of the original triangle by $\frac{1}{2}$ to get the coordinates of the vertices of the dilated image.

1.

2.

3. Trapezoid *ABCD* was translated to the right 3 units, then dilated by a factor of 1.5 using the origin as the center of dilation.

4. Rectangle *Q'R'S'T'* has coordinates Q'(–9, 21), R'(–9, 33), S'(12, 33), and T'(12, 21). I multiplied the coordinates of rectangle *QRST* by the scale factor, 3.

   b. It is an enlargement because the scale factor is greater than 1.

5. Trapezoid *F'G'H'I'* has coordinates F'(1, 1), G'(1, 2), H'(3, 2), and I'(3, 1).

6. b and c. Trapezoid *ABCD* was reflected over the *y*-axis, then dilated by a scale factor of 2 with the origin as the center of dilation.
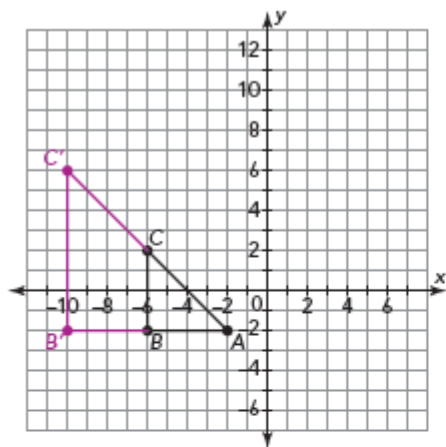
7.

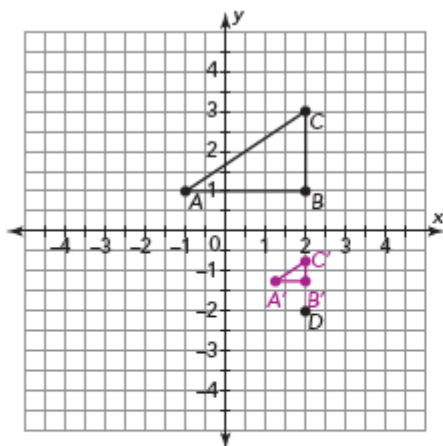8. Scale factor 2

9. 1.5

10. b and d

11.

1a.

b. The coordinates are B'(−10, −2) and C'(−10, 6).

c. The scale factor is greater than 1, so the dilation is an enlargement. I can see from the graph that ΔAB'C' is larger than ΔABC.

d. The corresponding angles in the original triangle and its image are congruent. In these two triangles, ∠A is an angle in both the original triangle and its image, and is congruent to itself.

e. The lengths of the corresponding sides of the original triangle and its image are proportional. For these two triangles, the length of each side of ΔAB'C' is twice the length of the corresponding side of ΔABC.

12.

2a.

b. The coordinates are A'(1.25, −1.25), B'(2, −1.25) and C'(2, −0.75).

c. The scale factor is less than 1, so the dilation is a reduction. I can see from the graph that ΔA'B'C' is smaller than ΔABC.

d. The corresponding angles in the original triangle and its image are congruent.