

Name _____ Per _____

LO: I can solve problems involving scale factors and dilations.

SHOW ALL NECESSARY WORK FOR EVERY PROBLEM.

(1) Write the composition of dilations as a single dilation. (Think: what happens to the center and scale factor?)

(a) $D_{O, \frac{2}{3}}(D_{O, 9}(\triangle SLY))$ _____

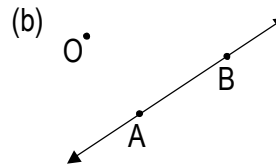
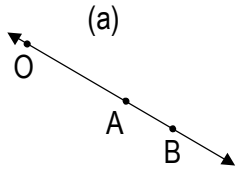
(b) $D_{O, 4}(\triangle DOG) = D'O'G'$ and $D_{O, 5}(\triangle D'O'G') = D''O''G''$ _____

(c) $D_{O, \frac{5}{4}}(D_{O, \frac{4}{5}}(\triangle HAS))$ _____

(d) $D_{O, 5}(D_{O, \frac{1}{5}}(\triangle TOY))$ _____

(2) What do you notice about the scale factors in parts (c) and (d)? What does that tell you about the location of the images of triangles HAS and TOY?

(3) In each diagram below, dilate line AB from center O with scale factor 3.



(c) Describe the location and qualities of line A'B' for both parts (a) and (b)

- (4) Figure W is dilated from O_1 with a scale factor $r_1 = 2$ to yield W' . Figure W' is then dilated from center O_2 with a scale factor $r_2 = \frac{1}{4}$ to yield W'' .



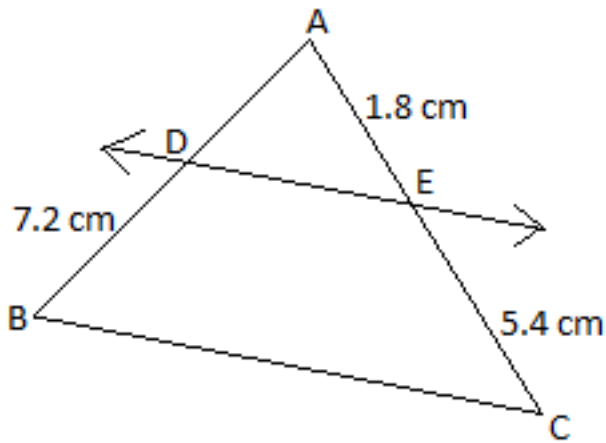
- Construct the composition of dilations of figure W described above.
 - If you were to dilate figure W'' , what scale factor would be required to yield an image that is congruent to figure W ?
 - Locate the center of dilation that maps W'' to W using the scale factor that you identified in part (b).
- (5) What point is the center of dilation for each transformation below?
- Triangle WET maps to triangle MAT.
 - Line segment AE maps to line segment BE.
 - In part (b), is line segment BE on the same line as AE, parallel to AE, or neither? How do you know?

Review Unit 5

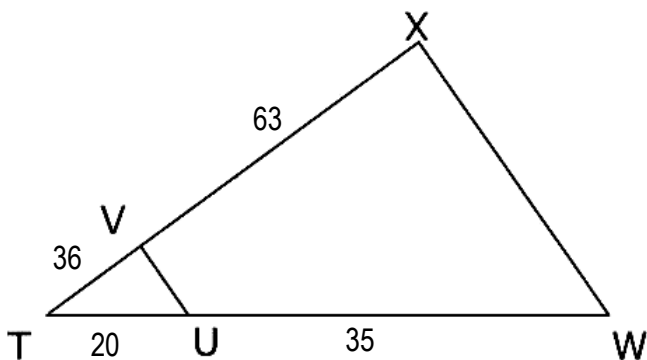
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- (6) Miriam says that if AB maps to CD by a dilation about point O , CD must be longer than AB . Agree or disagree with Miriam's statement and justify your response.

- (7) Line DE is parallel to line BC when AD is what value?



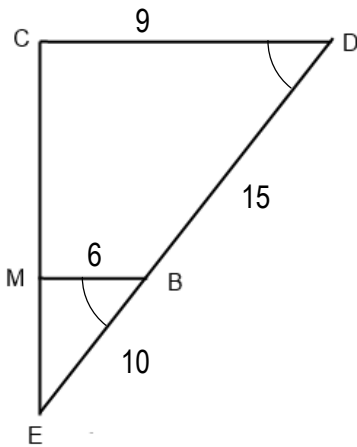
- (8) Are there any parallel lines in the diagram below? Provide sufficient evidence to support your claim.



Review Unit 5

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(9) Tyrell wrote a problem for a Geometry poster assignment. What is mathematically wrong with his diagram? Use the dilation theorem to explain your decision and provide sufficient evidence to support your claim.



(10) Review lessons 5.1 – 5.8, particularly problems involving the side splitter theorem.