

Name _____ Per _____

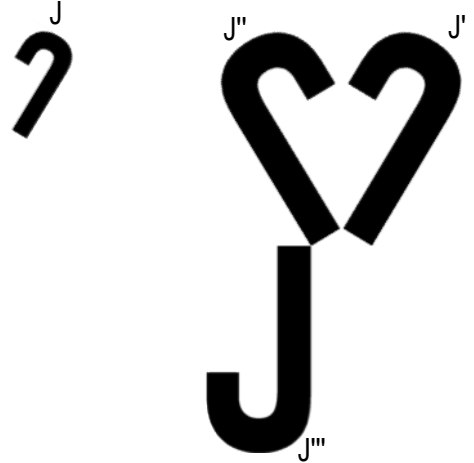
LO: I can describe a similarity transformation, which is a sequence of rigid motions and dilations, that will map one shape to another or explain why it is not possible.

DO NOW On the back of this packet

(1) Similarity: Mapping one figure to another through a composition of transformations.

compass,
straightedge

(a) Observe the figures J, J'', and the intermediate images between J and J''' below. J and J''' are similar. Describe transformations that will map one figure to the next. Where needed, add points and lines to the diagram, approximate angle measures and use a ruler to estimate scale factors.



J → J' _____

J' → J'' _____

J'' → J''' _____

(b) OPTIONAL CHALLENGE: From part (a), there is a sequence of transformations that will map J to J'''. Write the sequence in short notation below.

_____ (_____ (_____ (_____))))

(c) Read the criterion **similar figures** below.

*** Two figures are similar if there exists a similarity transformation that maps one figure onto the other.**

*** A similarity transformation is a composition of a finite number of dilations, translations, reflections, and/or rotations of the plane.**

Based on the definition you just read, is figure J similar to J'''? Describe you how know.

(2) **Similarity: Mapping one figure to another through a composition of transformations.**

compass,
straightedge

(a) Damian used a different sequence of transformations to map J to J'' . Does his process also work? If so, write a composition of similarity transformations that will map J to J'' .



OPTIONAL function notation: _____(_____(_____(_____)))

(b) So far, you have described two sequences of transformations that will map J to J'' . Use the diagram below to write your own sequence of transformations that is different from the two you have already seen. Sketch your sequence of transformations and write it in short notation below.

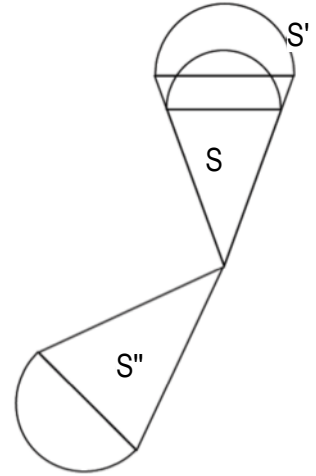


OPTIONAL function notation: _____(_____(_____(_____)))

(3) **Similarity: Mapping one figure to another through a composition of transformations.**

compass,
straightedge

(a) Figure S is similar to figure S". Which transformations compose the similarity transformation that maps S onto S"?



Write the sequence in notation: _____

(b) Figure P is similar to figure P". Which transformations compose the similarity transformation that maps P onto P"?

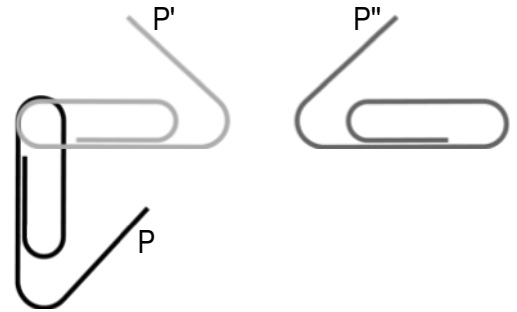
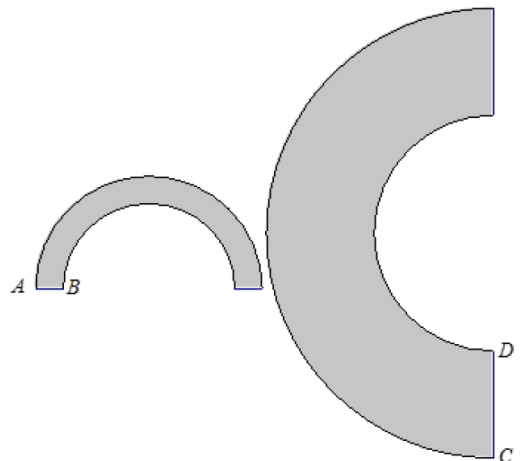


Figure P is not ONLY similar to figure P'', it is also _____ to P''.

_____ is a special case of similarity when the scale factor for dilation would be _____.

Write the sequence in short notation: _____

(c) Show that no sequence of basic rigid motions and dilations takes the small figure to the large figure. Take measurements as needed.



(4) **Similarity: Mapping one figure to another through a composition of transformations.**

compass,
straightedge

Describe the relationship between scale drawings, dilations, and similar figures by responding to the prompts below.

(1) How are scale drawings and dilations alike? _____

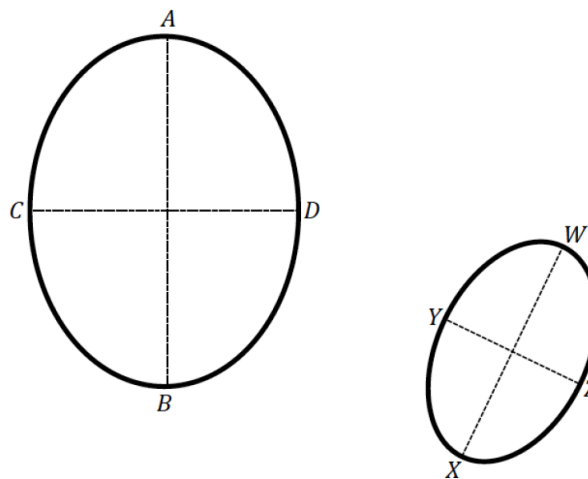
(2) How are scale drawings and dilations different? _____

(1) What is the relationship of similar figures to scale drawings and dilations? _____

(5) Is there a sequence of basic rigid motions and dilations that takes the large figure to the small figure. Take measurements as needed.

compass,
straightedge

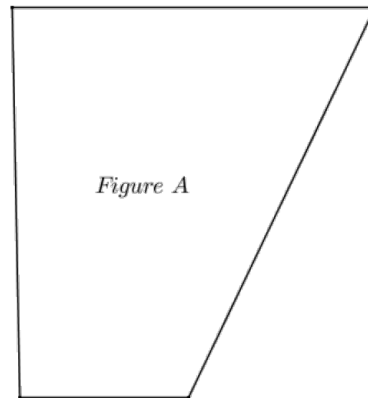
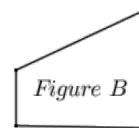
If there is one, write the sequence in short notation: _____



(6)
compass,
straightedge

Similarity: Mapping one figure to another through a composition of transformations.

Construct a sequence of basic rigid motions and dilations that takes figure A to figure B. Take measurements as needed. Write the sequence in short notation: _____



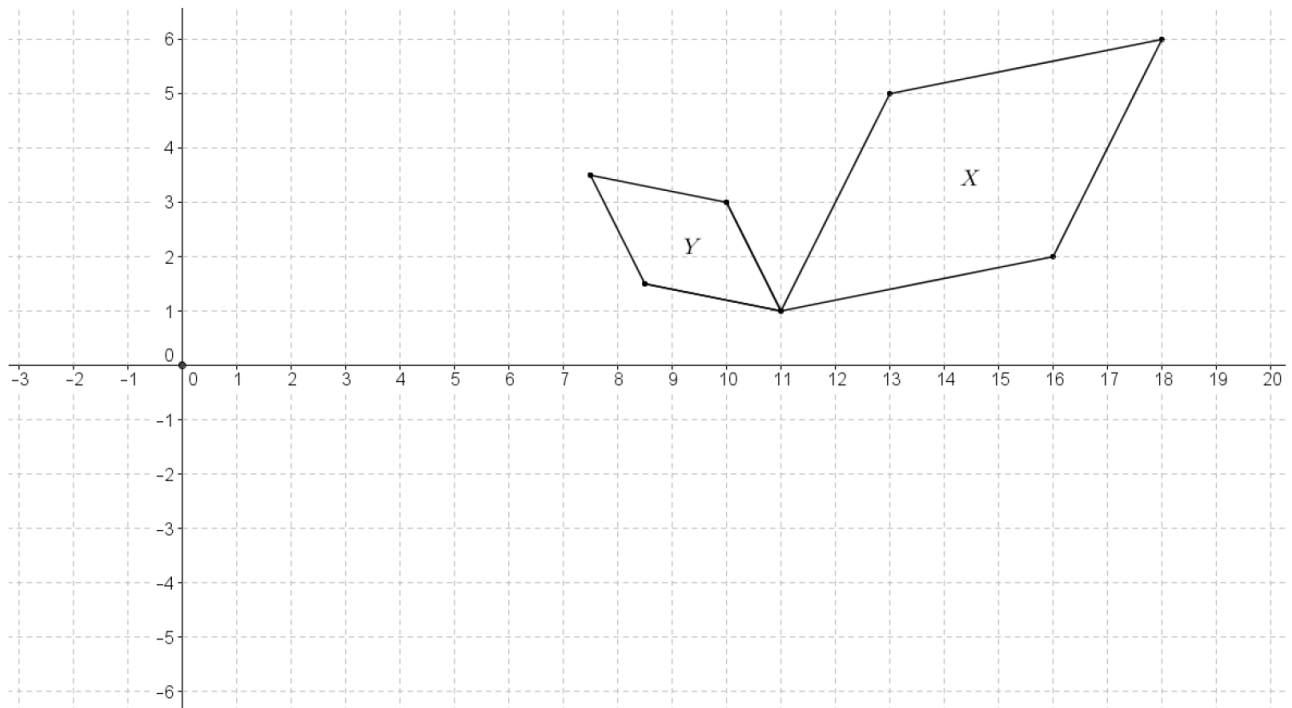
(7) **Exit Ticket**

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 (8) **Homework**

compass,
straightedge

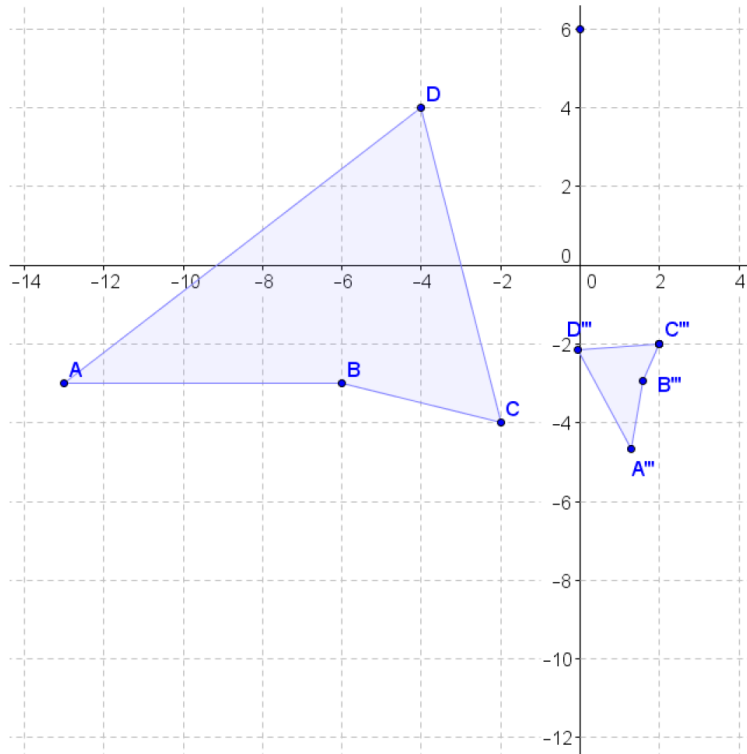
(1) Given the coordinate plane shown, identify a similarity transformation, if one exists, mapping X onto Y . If one does not exist, explain why.



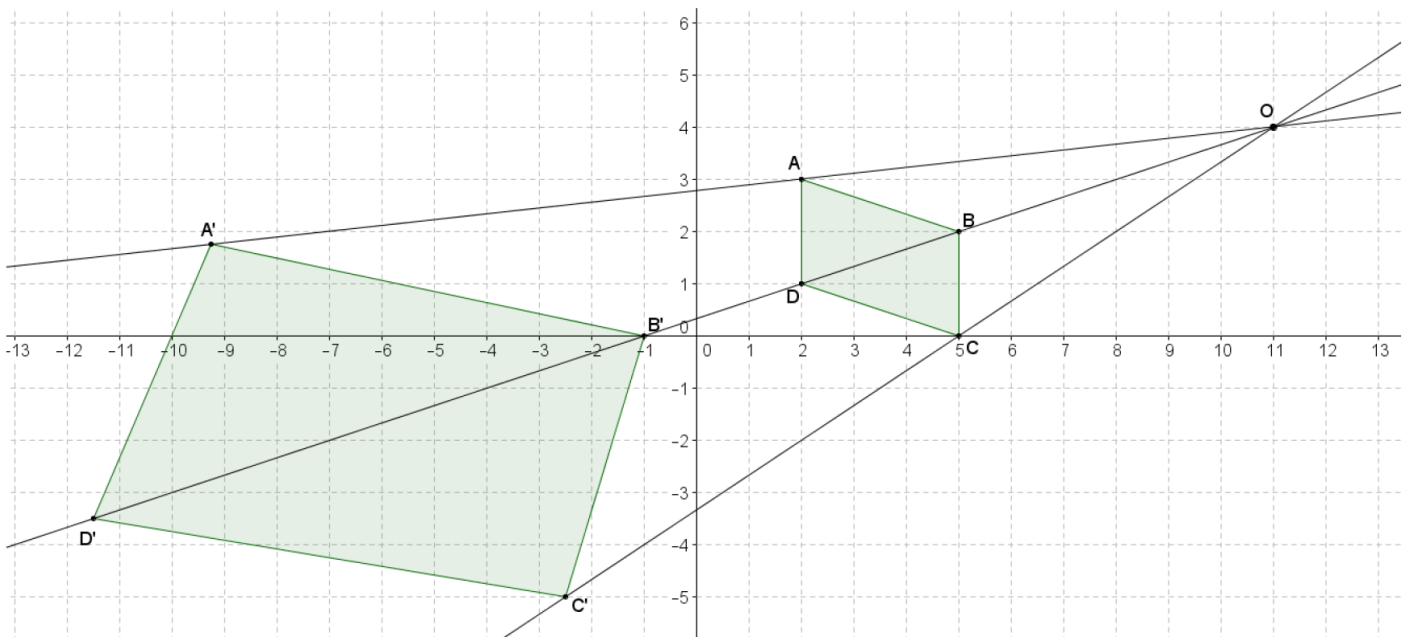
(2) Teddy correctly identified a similarity transformation with at least one dilation that maps Figure I onto Figure II. Ted began correctly identified a congruence transformation that maps Figure I onto Figure II. What must be true about Teddy's similarity transformation?

(8) Homework
cont.

(3) Given the coordinate plane shown, identify a similarity transformation, if one exists, that maps $ABCD$ onto $A'''B'''C'''D'''$. If one does not exist, explain why.



(4) The diagram below shows a dilation of the plane . . . or does it? Explain your answer.

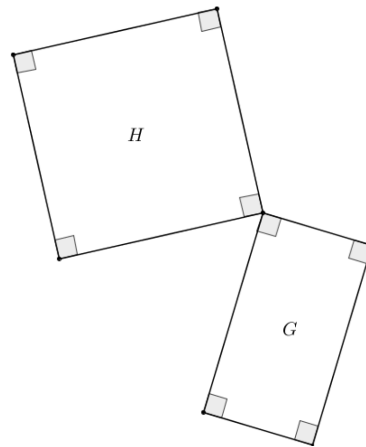


Exit Ticket Name _____ Date _____ Per _____

11.7L

(1) The LO (Learning Outcomes) are written below your name on the front of this packet. Demonstrate your achievement of these outcomes by doing the following:

Given the diagram below, identify a similarity transformation, if one exists, that maps G onto H . If one does not exist, explain why. Provide any necessary measurements to justify your answer.



DO NOW Name _____ Date _____ Per _____

11.7L

(1) Name the three rigid transformations and sketch an example that illustrates each one.

(2) What about this cartoon is supposed to make people smile? How does it relate to dilation?

