☐ **DO NOW – Geometry Regents Lomac 2014-2015** **Date** ____. **due** ____. **Similar by Transformation** **6.1**

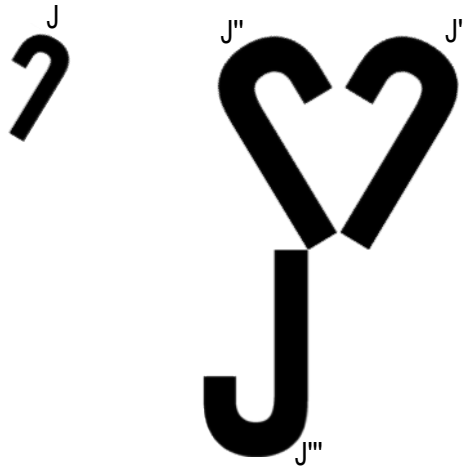
(DN) Name the three rigid transformations and sketch an example that illustrates each one.

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.

☐ (1) compass, straightedge **Similarity: Mapping one figure to another through a composition of transformations.**

☐ (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) 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.

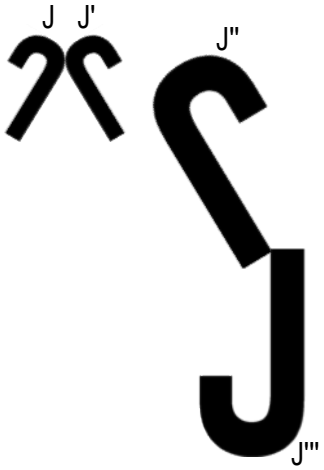
* *Two figures are similar if there exists a similarity transformation that maps one figure onto the other.*

* *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) compass, straightedge **Similarity: Mapping one figure to another through a composition of transformations.**

☐ (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'''.



_____(_____(_____(____)))

☐ (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.

_____(_____(_____(____)))

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

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

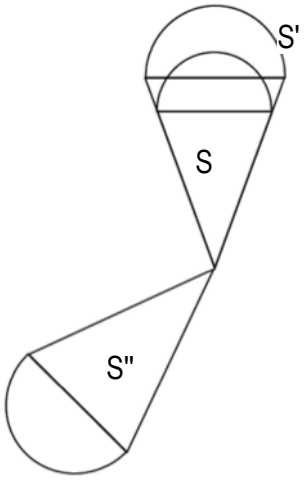
_____

_____

_____

_____

_____



Write the sequence in notation: _____

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

_____

_____

_____

_____

_____

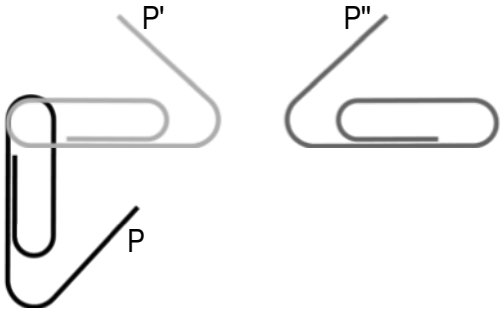


Figure P is not ONLY similar to figure P", it is also _____ to P".

_____ 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.

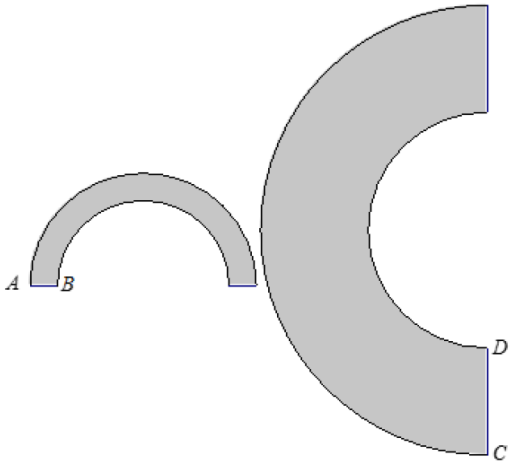
_____

_____

_____

_____

_____



☐ (4) compass, straightedge

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

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) compass, straightedge

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

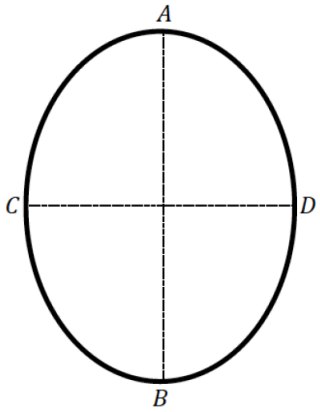
_____

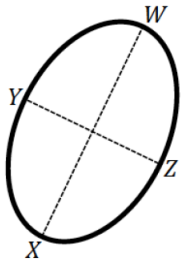
_____

_____

_____

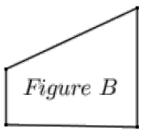
If there is one, write the sequence in short notation: _____

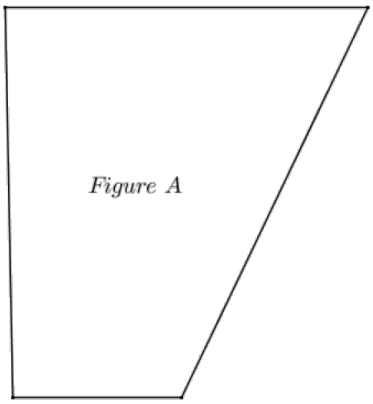




☐ (4) compass, straightedge **Similarity: Mapping one figure to another through a composition of transformations.**

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

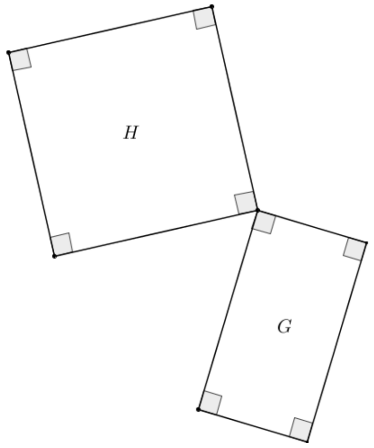




☐ (5) compass, straightedge

Exit Ticket

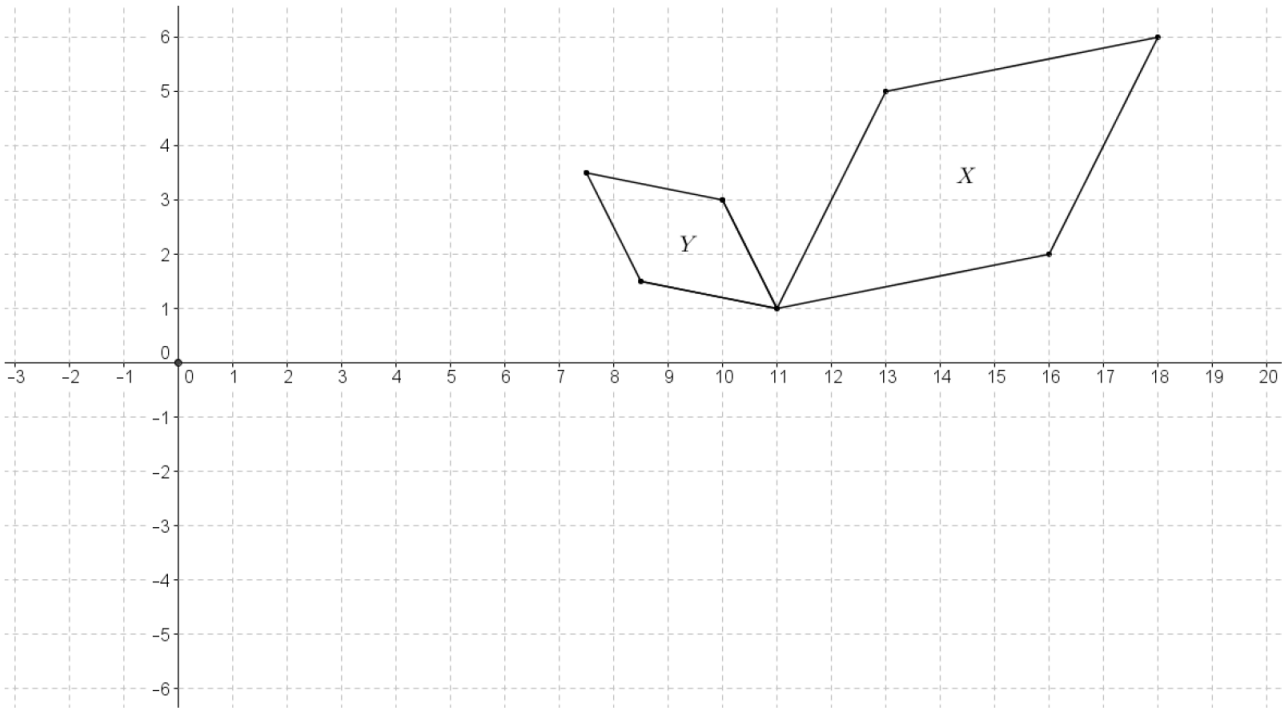
(1) Given the diagram below, identify a similarity transformation, if one exists, that maps *G* onto *H*. If one does not exist, explain why. Provide any necessary measurements to justify your answer.



☐ (6) compass, straightedge

Homework

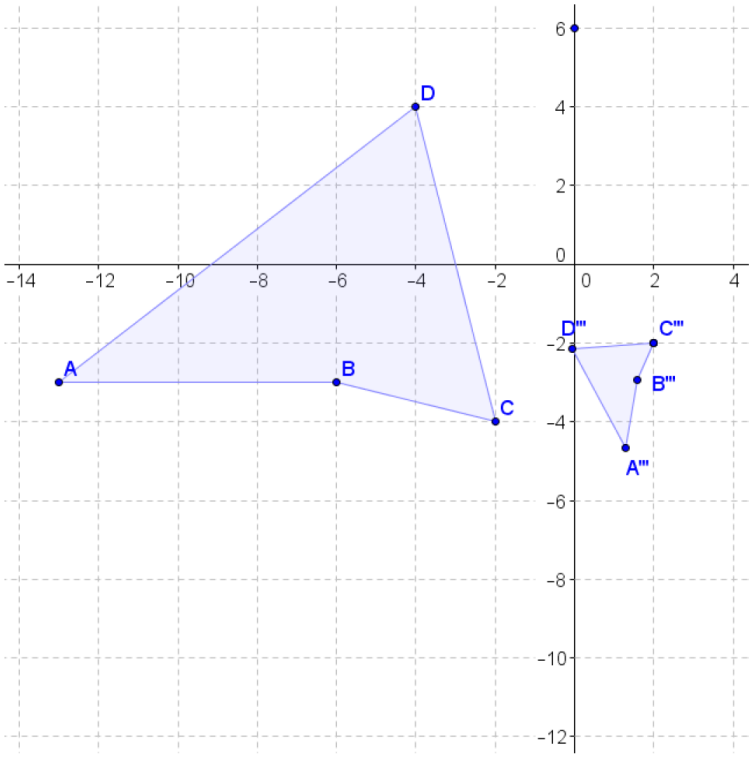
☐ (1) Given the coordinate plane shown, identify a similarity transformation, if one exists, mapping *X* onto *Y*. If one does not exist, explain why.



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

☐ (6) cont. **Homework**

☐ (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.