☐ **DO NOW – Geometry Regents Lomac 2014-2015** **Date** 10/23 **due** 10/24 **Application: Congruence and Rigid Motion** **2.11**

(DN) Describe what congruence means and draw a picture that illustrates two figures that are congruent.

Name _____**Per**_____

SLO: I can perform a sequence/composition of transformations on a given figure using a straightedge and compass, explain how the sequence results in the final image, and use function notation for the .

☐ (1) **Corresponding parts**

Correspondence can be thought of as a "pairing" of points, segments, or angles between two shapes.
List a few everyday objects that come in pairs.

_____ _____ _____

☐ (a) Are pairs of everyday objects always identical/congruent? _____

☐ (b) Think about a pair of shoes. What part of the right shoe corresponds to the given part of the left shoe?

Left Shoe:	Lace	Sole	Tongue	Velcro
Right Shoe:	_____	_____	_____	_____

☐ (c) The right lace does/does not have to be exactly the same as the left because

_____

☐ (d) Like the shoes, corresponding parts of figures do not have to be exactly the same – congruent – however, they always will be when a figure undergoes a rigid transformation because _____

_____

☐ (2) transparencies, dry erase markers, erasers **Identifying corresponding parts** You may use transparencies to help you see each correspondence.

☐ In the figure below, the left figure has been mapped to the one on the right by a rotation of 240° around point P.

Point _____ corresponds to point _____

Point _____ corresponds to point _____

Point _____ corresponds to point _____

Segment _____ corresponds to segment _____

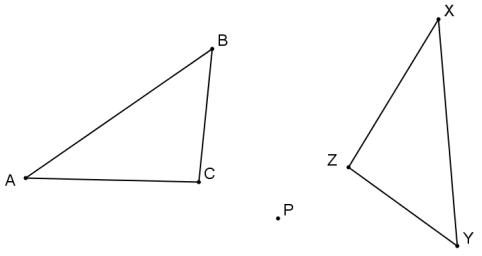
Segment _____ corresponds to segment _____

Segment _____ corresponds to segment _____

Angle _____ corresponds to angle _____

Angle _____ corresponds to angle _____

Angle _____ corresponds to angle _____

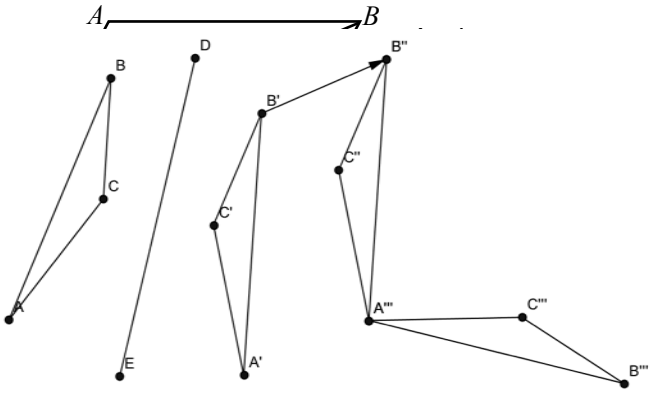


Based on the corresponding parts above, write a congruence statement for the triangles _____

Write the function notation for the transformation _____

☐ (3) **Reading and writing function notation for transformations**

☐ (a)The triangles in the figure below are congruent by a _____° rotation around the midpoint (not drawn) of $\overline{BD}$. List the corresponding sides and angles.



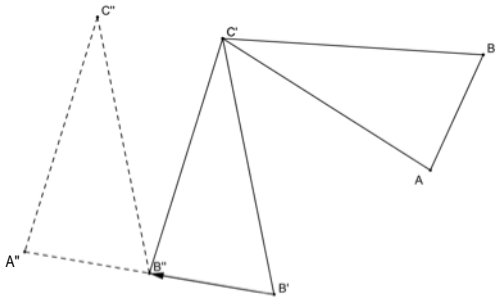
Sides: _____ ➜ _____, _____ ➜ _____, _____ ➜ _____

_____, _____ ➜ _____, _____ ➜ _____

parts congruent?_____ because_____

_____

_____



(i) ☐ Describe the transformations _____

_____

(ii) ☐ State the composition of transformations in function notation _____

(iv) ☐ List each set of corresponding sides

_____ ➜ _____➜ _____, _____ ➜ _____➜ _____, _____ ➜ _____➜ _____

(v) ☐ List each set of corresponding angles

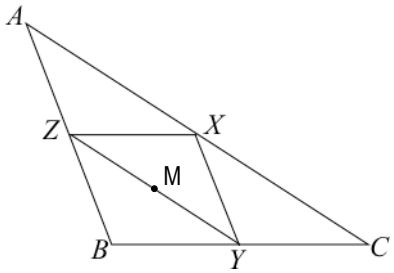
_____ ➜ _____➜ _____, _____ ➜ _____➜ _____, _____ ➜ _____➜ _____

(vi) ☐ Circle the correct congruence statement and explain why it is the correct statement.

$\triangle CAB \cong \triangle A"B"C"$ $\triangle ABC \cong \triangle B"A"C"$ $\triangle CBA \cong \triangle C"B"A"$

_____

All of the triangles in the diagram below are congruent. Choose a triangle to be the original figure and then write a composition of transformations that will map the triangle you chose onto another triangle in the figure. Your composition must use the other 2 triangles in the diagram as steps to get to the final image.



Describe: _____

_____

_____

_____

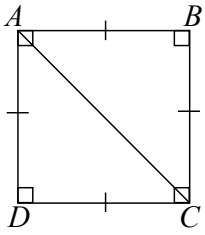
_____

Composition in function notation:

_____

☐ (4) **Exit Ticket**

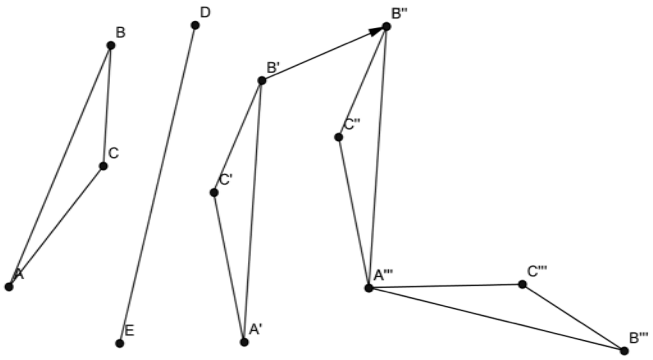
In square ABCD, diagonal AC is drawn. The triangles are reflections.



Write a congruence statement for the triangles.

Write the function notation for the reflection.

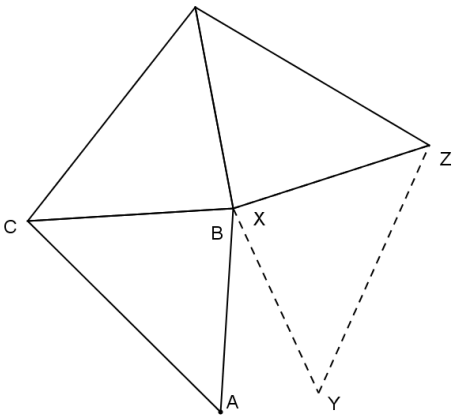
☐ (5) **Homework** For the diagram below, (a) Describe the composition of transformations, (b) Write the composition of transformations in function notation, (c) Write a congruence statement for the original and the final image.



Composition of Transformations: _____

Congruence Statement _____

☐ (5) **Homework** For each diagram below, (a) Describe the composition of transformations from triangle ABC to triangle XYZ, (b) Write the composition of transformations in function notation, (c) Write a congruence statement for the original and the final image..



Composition of Transformations:_____

Congruence Statement _____