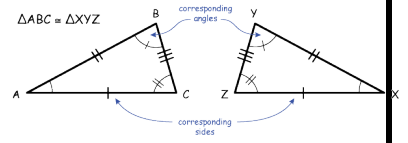| Geometry Regents Lomac 2015-2016 Date 10/19 due 10/20	Correspondence, Congruence and Rigid 2.12R Motions

Name _____ **Per**_____

LO: I can identify corresponding parts, write congruence statements, and explain how transformations and congruence are related.

$\triangle ABC \cong \triangle XYZ$

☐ **DO NOW**   On the back of this packet

☐ (1)   **Need to know: 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)   **Identifying corresponding parts** You may use transparencies to help you see each correspondence.

transparencies, dry erase markers, erasers

☐ 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 _____
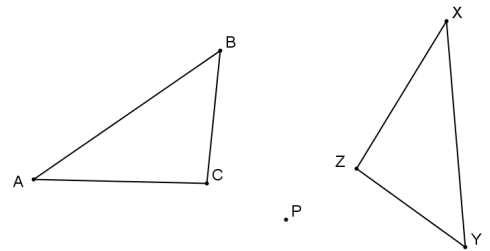
Segment _____ corresponds to segment _____

Segment _____ corresponds to segment _____

Segment _____ corresponds to segment _____

Angle _____ corresponds to angle _____

Angle _____ corresponds to angle _____
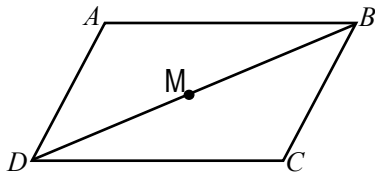
Angle _____ corresponds to angle _____

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

Write the function notation for the transformation _____

(3) Identifying corresponding parts and writing congruence statements

☐ (a)The triangles in the figure below are congruent by a _____° rotation around the midpoint, *M*, of $\overline{BD}$. List the corresponding sides and angles.
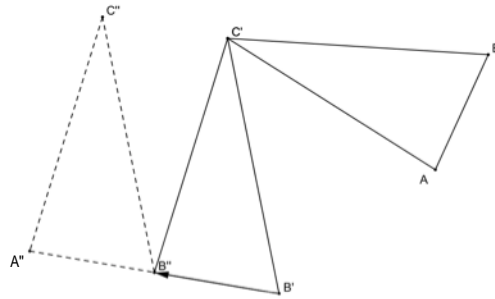

Sides: _____ ➡ _____ , _____ ➡ _____ , _____ ➡ _____

Angles: _____ ➡ _____ , _____ ➡ _____ , _____ ➡ _____

Are the corresponding parts congruent?_____ because_____

_____

_____

☐ (b)Below is a composition of transformations.

(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

_____ ➡ _____ ➡ _____ , _____ ➡ _____ ➡ _____ , _____ ➡ ____ ➡ _____
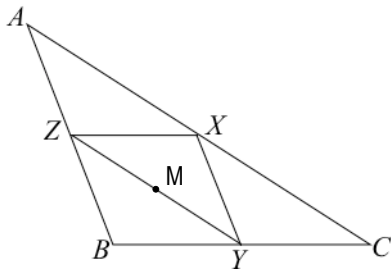
(vi) ☐ Circle the correct congruence statement and explain why it is the correct statement.

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

_____

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**

ON THE LAST PAGE

☐ (5) **Homework**

(1) 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**

(2) Construct a 45° angle. (THINK: 45° is half of _____ so I can construct a _____ to get a _____ angle and then bisect it.)
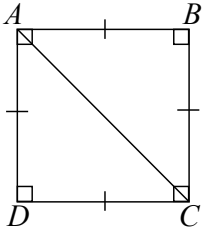
(3) Construct a 30° angle. (THINK: 30° is half of _____ so I can construct a _____ to get a _____ angle and then bisect it.)

EXIT TICKET   **Name**_____ **Date** _____ _____ **Per**_ _____   **2.12R**

(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:

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.

(2) Add to number 2 in the Do Now – you might see humor where you did not earlier.

6

DO NOW   Name_____ Date _____ Per_____   2.12R

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

(2) Describe what is happening in this cartoon. If you think you know why it's supposed to be funny, describe. If not, come back at the end of the lesson and give it a try.