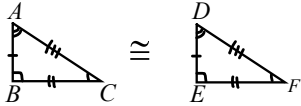


# 5.1 Congruent Triangle Parts NOTES

## Congruent Triangles

- Congruent triangles are drawn by applying one or more *transformations* to the original triangle.



- All corresponding sides are congruent

$$\overline{AB} \cong \square, \overline{AC} \cong \square, \overline{BC} \cong \square$$

- All corresponding angles are congruent

$$\angle A \cong \square, \angle B \cong \square, \angle C \cong \square$$

Congruency Transformations include:

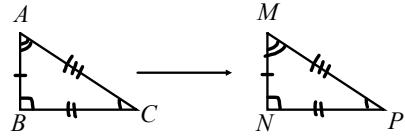
- Translations
- Reflections
- Rotations



## Congruency Transformations

Transform or change of appearance

- 1.) Translations = Move up/down /left/right only



$$\triangle ABC \cong \square$$

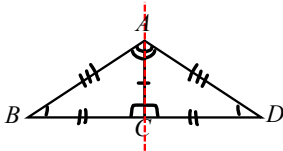
- All corresponding sides are congruent

$$\overline{AB} \cong \square, \overline{AC} \cong \square, \overline{BC} \cong \square$$

- All corresponding angles are congruent

$$\angle A \cong \square, \angle B \cong \square, \angle C \cong \square$$

- 2.) Reflections = Mirror image over a line



$$\triangle ABC \cong \square$$

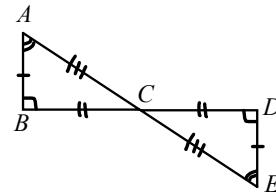
- All corresponding sides are congruent

$$\overline{AB} \cong \square, \overline{AC} \cong \square, \overline{BC} \cong \square$$

- All corresponding angles are congruent

$$\angle BAC \cong \square, \angle ABC \cong \square, \angle ACB \cong \square$$

- 3.) Rotations = Spin/turn around a point



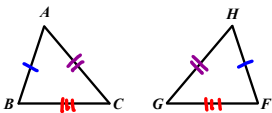
$$\triangle ABC \cong \square$$

- All corresponding sides are congruent

$$\overline{AB} \cong \square, \overline{AC} \cong \square, \overline{BC} \cong \square$$

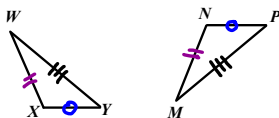
- All corresponding angles are congruent

$$\angle A \cong \square, \angle B \cong \square, \angle ACB \cong \square$$



$$\triangle \_\_ \cong \triangle \_\_$$

Congruent Parts are:



$$\triangle \_\_ \cong \triangle \_\_$$

Congruent Parts are:

$$\triangle \mathbf{KAT} \cong \triangle \mathbf{NEW}$$

angles	

sides	

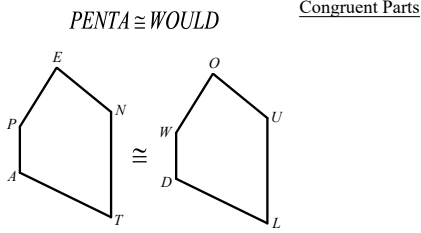
$$\triangle \mathbf{MEL} \cong \triangle \mathbf{BAH}$$

angles	

sides	

# 5.1 Congruent Triangle Parts NOTES

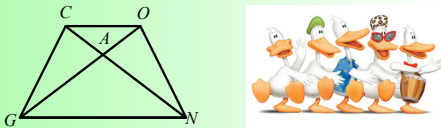
Congruent Polygons = All pairs of corresponding parts are congruent.



## 4 Things You Can "Assume" From a Diagram

1. Straight Angles
2. Supplementary Angles
3. Vertical Angles
4. Reflexive Property

Included angle = The angle formed between the two sides.

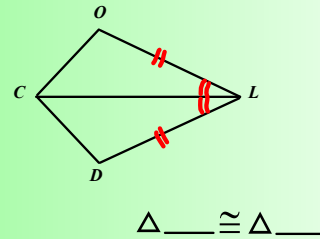


Given the two sides below, identify the included angle.

Sides	$\overline{CA}$ and $\overline{AG}$	$\overline{AN}$ and $\overline{ON}$	$\overline{CN}$ and $\overline{GN}$	$\overline{GA}$ and $\overline{AN}$	$\overline{OC}$ and $\overline{GO}$
Included Angle					

## Reflexive Property

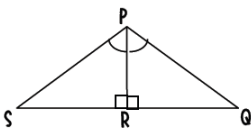
- A segment or angle is congruent to itself
- > Makes a "copy" for you to use in multiple triangles
- > Hint: Re-draw separately and label



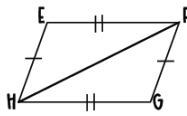
## TRIANGLE HINTS PAGE 1

LABELING is so very, very, important!

### REFLEXIVE SIDE:

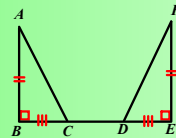


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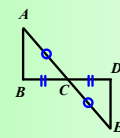


\_\_\_\_\_

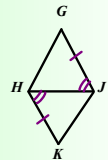
List the congruent triangles in each diagram below. If there is not enough to prove congruent triangles, list what additional information would be needed.



$\Delta \_ \cong \Delta \_$



$\Delta \_ \cong \Delta \_$



$\Delta \_ \cong \Delta \_$