SOL 6.12 – Congruency

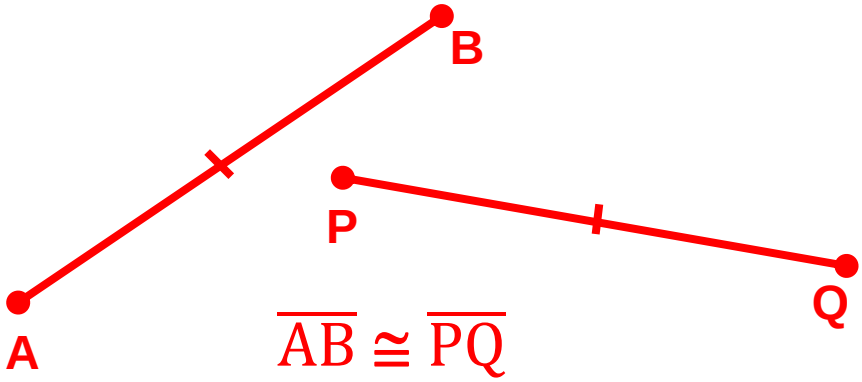
6.12 The student will determine congruence of segments, angles, and polygons.

Understanding the Standard:

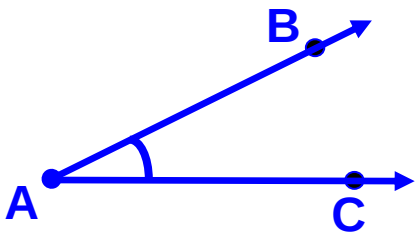
- Congruent figures have exactly the same size and the same shape.
- Non-congruent figures may have the same shape but not the same size.
- The symbol for congruency is $\cong$.
- The corresponding angles of congruent polygons have the same measure, and the corresponding sides of congruent polygons have the same measure.
- The determination of the congruence or non-congruence of two figures can be accomplished by placing one figure on top of the other or by comparing the measurements of all sides and angles.
- Construction of congruent line segments, angles, and polygons helps students understand congruency.

SOL 6.12 – Congruent Figures

- Have exactly the same shape and size.

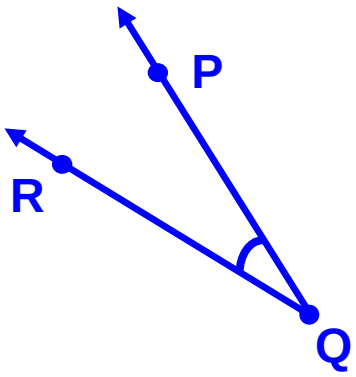


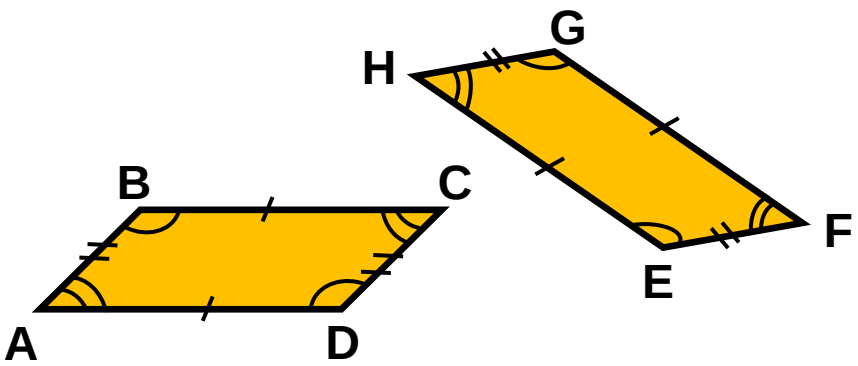
$\overline{AB} \cong \overline{PQ}$



$\angle BAC \cong \angle PQR$

Notice the order matters

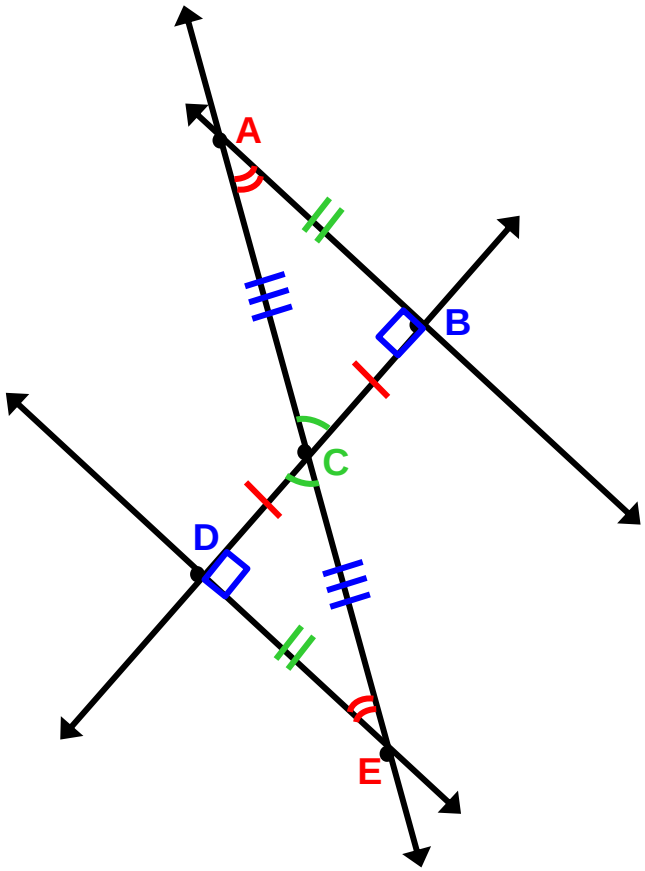




$\square ABCD \cong \square HGFE$

Notice the order matters

SOL 6.12 – Corresponding Parts



ABC ~ EDC	
Angles	**Sides**
∠CAB corresponds to ∠CED	$\overline{AB}$ corresponds to $\overline{ED}$
∠ABC corresponds to ∠EDC	$\overline{BC}$ corresponds to $\overline{DC}$
∠BCA corresponds to ∠DCE	$\overline{CA}$ corresponds to $\overline{CE}$

Essential Understandings:

Given two congruent figures, what inferences can be drawn about how the figures are related?

They will have the same size + shape

Given two congruent polygons, what inferences can be drawn about how the polygons are related?

Corresponding angles will have the same measure. sides " " " " "

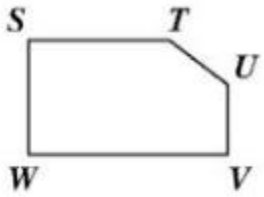
Essential Knowledge & Skills:

The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to

- Characterize polygons as congruent and non-congruent according to the measures of their sides and angles.
- Determine the congruence of segments, angles, and polygons given their attributes.
- Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving practical and mathematical problems.

Released SOL Questions:

Figure $STUVW$ is shown.



Which polygon appears congruent to figure $STUVW$?

A 

C 

B 

D