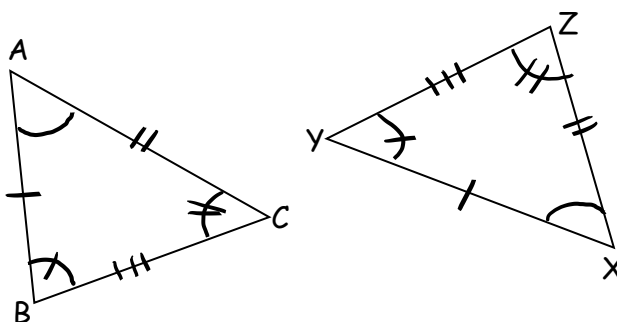


Learning Targets	Help!	I'm getting there...	I'm almost there...	Yes! I totally got this! ☺
1. I can explain the definition of congruence.				
2. I can identify corresponding angles and sides of two triangles.				
3. I can identify corresponding angles and sides by choosing corresponding positions in congruence statements.				
4. I can show that if two triangles have all corresponding sides and all corresponding angles congruent, then the two triangles are congruent.				
5. I can develop and write a congruency statement for two figures by matching corresponding parts of the figures.				

*Congruent Polygons: Polygons that are the same shape and size
* Each angle and side is congruent to an
angle or side in another polygon

*Congruence Statement: Matches up all of the corresponding $\cong$ parts



$$\triangle ABC \cong \triangle XYZ$$

Example A: Name the congruent parts of $\triangle RST \cong \triangle YXZ$.

$$\begin{array}{ll} \angle R \cong \angle Y & \overline{RS} \cong \overline{YX} \\ \angle S \cong \angle X & \overline{ST} \cong \overline{XZ} \\ \angle T \cong \angle Z & \overline{RT} \cong \overline{YZ} \end{array}$$

Example B: Complete each statement by drawing the triangle pairs.

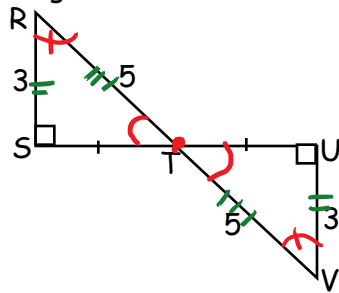
1) If $\triangle ABC \cong \triangle XYZ$, then $\overline{AB} \cong \underline{\overline{XY}}$

2) If $\triangle LKF \cong \triangle TWN$, then $\angle W \cong \underline{\angle K}$

3) If $\triangle ECF \cong \triangle KIV$, then $\triangle VKI \cong \triangle FEC$

Example C: Are the triangles congruent?

Yes
 $\triangle TRS \cong \triangle TVU$

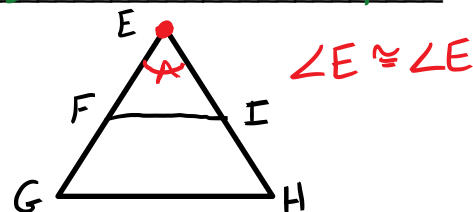
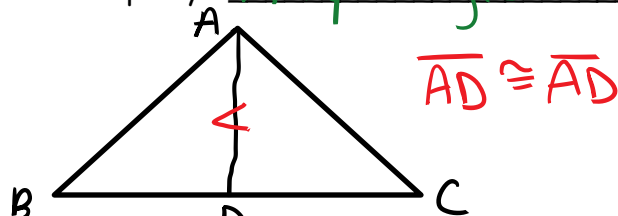


$\angle S \cong \angle U$
 $\angle RTS \cong \angle VTU$
 $\angle R \cong \angle V$
(No choice theorem)

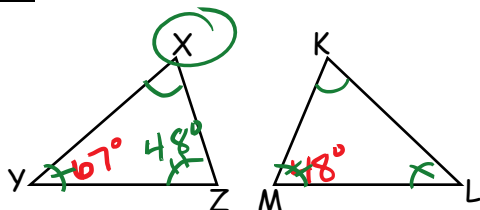
$\overline{ST} \cong \overline{TU}$
 $\overline{RS} \cong \overline{UV}$
 $\overline{RT} \cong \overline{TV}$

*Theorem 4-1: (No Choice Theorem) If 2 $\angle$ s of a $\triangle$ are $\cong$ to 2 $\angle$ s of another $\triangle$, then the 3rd pair of $\angle$ s must be $\cong$.

*Reflexive Property: Any angle or segment is $\cong$ to itself.



Example D: Find the $m\angle X$ if $m\angle Y = 67^\circ$, $m\angle M = 48^\circ$, and $\triangle XYZ \cong \triangle KLM$.



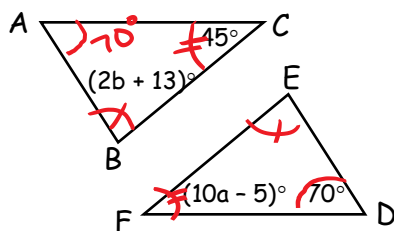
$$X + 67 + 48 = 180$$

$$X + 115 = 180$$

$$-115 \quad -115$$

$$X = 65^\circ$$

Example D: Given: $\triangle ABC \cong \triangle DEF$, find the values of a and b.



$$70 + 45 + 2b + 13 = 180$$

$$128 + 2b = 180$$

$$-128 \quad -128$$

$$2b = 52$$

$$b = 26$$

$$10a - 5 = 45$$

$$+5 \quad +5$$

$$\frac{10a}{10} = \frac{50}{10}$$

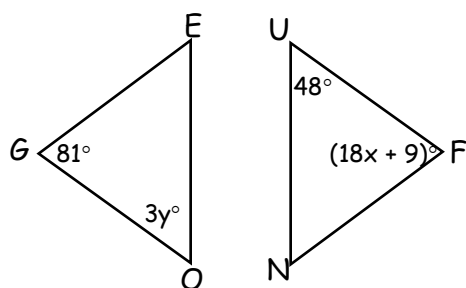
$$a = 5$$

WHITEBOARDS:

Example A: Complete each statement by drawing the triangle pairs.

- 1) If $\triangle ABC \cong \triangle XYZ$, then $\overline{YZ} \cong$ _____
- 2) If $\triangle LKF \cong \triangle TWN$, then $\angle F \cong$ _____
- 3) If $\triangle ECF \cong \triangle KIV$, then $\triangle CFE \cong$ _____

Example B: Given $\triangle GEO \cong \triangle FUN$. Find the values of x and y and $m\angle N$.



$$x = \underline{\hspace{2cm}}$$

$$y = \underline{\hspace{2cm}}$$

$$m\angle N = \underline{\hspace{2cm}}$$

Example C: Given: $\overline{AB} \cong \overline{DE}$, $\overline{BC} \cong \overline{EF}$, $\angle A \cong \angle D$, and $\angle B \cong \angle E$.

Do we know $\triangle ABC$ and $\triangle DEF$ are congruent? Justify your answer.

