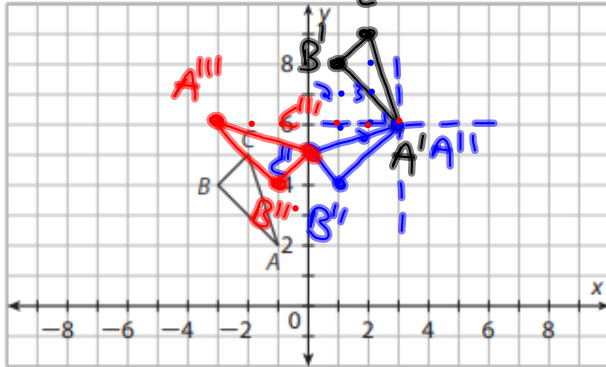


Bell Work

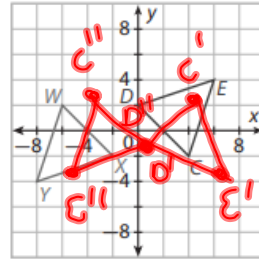
pg. 122 (maybe hw page)

3. Translate $\triangle ABC$ by $\langle 4, 4 \rangle$, rotate 90 degrees counterclockwise around A, and reflect over the y-axis.



pg. 132 #9 (on homework page)

9. $\triangle CDE \cong \triangle WXY$



Reflected x: $(x, -y)$

Reflected y: $(-x, y)$

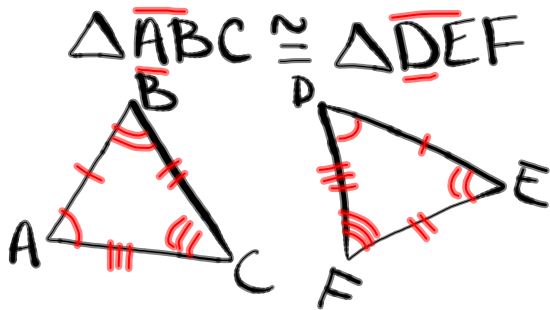
Trans.: $(x-2, y)$

$$(x, y) \rightarrow (x, -y) \rightarrow (-x, y) \rightarrow (x-2, y)$$

3.3 Corresponding Parts of Congruent Figures are Congruent

Essential Question: What can you conclude about two figures that are congruent?

Corresponding Parts of Congruent Figures are Congruent- If two figures are congruent, then corresponding sides are congruent AND corresponding angles are congruent

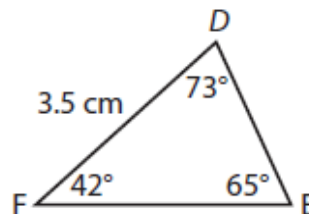
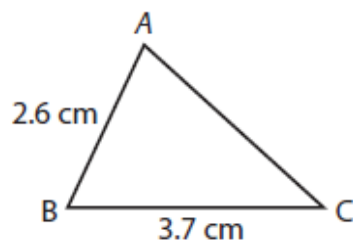


Example 1 $\triangle ABC \cong \triangle DEF$. Find the given side length or angle measure.

pg 140

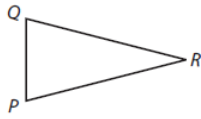
$DE = 2.6$

Ⓑ $m\angle B = 65^\circ$



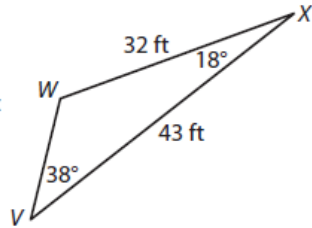
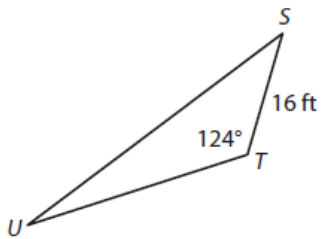
Reflect

3. **Discussion** The triangles shown in the figure are congruent. Can you conclude that $\overline{JK} \cong \overline{QR}$? Explain.



Your Turn

$\triangle STU \cong \triangle VWX$. Find the given side length or angle measure.



4. SU

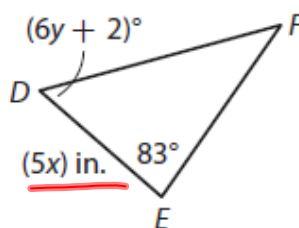
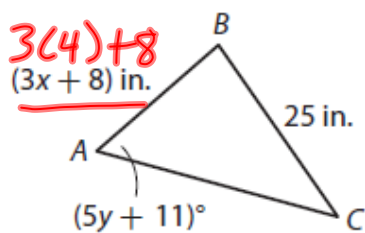
5. $m\angle S$

Rigid motions preserve length and angle measure.

Properties of Congruence

Reflexive Property of Congruence	$\overline{AB} \cong \overline{AB}$
Symmetric Property of Congruence	If $\overline{AB} \cong \overline{CD}$, then $\overline{CD} \cong \overline{AB}$.
Transitive Property of Congruence	If $\overline{AB} \cong \overline{CD}$ and $\overline{CD} \cong \overline{EF}$, then $\overline{AB} \cong \overline{EF}$.

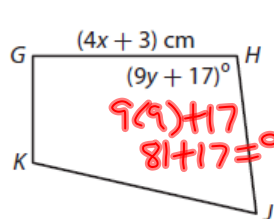
$\triangle ABC \cong \triangle DEF$. Find the given side length or angle measure.



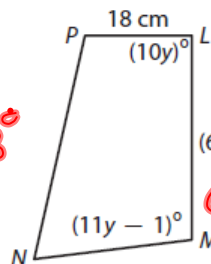
$$\begin{array}{r}
 AB = 20 \\
 3x + 8 = 5x \\
 -3x \quad -3x \\
 \hline
 8 = 2x \\
 \frac{8}{2} = \frac{2x}{2} \\
 4 = x
 \end{array}$$

$$\begin{array}{r}
 m\angle D = 6(9) + 2 = 56^\circ \\
 5y + 11 = 6y + 2 \\
 -5y \quad -2 \quad -5y \quad -2 \\
 \hline
 9 = y
 \end{array}$$

Quadrilateral $\underline{GHJK} \cong$ quadrilateral \underline{LMNP} . Find the given side length or angle measure.



$$\begin{aligned} 9(9) + 17 \\ 81 + 17 = 98^\circ \end{aligned}$$



$$\begin{aligned} 6(8) - 13 \\ 48 - 13 = 35 \text{ cm} \end{aligned}$$

6. LM

$$\begin{aligned} 4x + 3 &= 6x - 13 \\ \cancel{4x} + 3 &\quad \cancel{-4x} + 13 \\ \hline 6 &= 2x \\ \frac{6}{2} &\quad \frac{2x}{2} \\ 3 &= x \end{aligned}$$

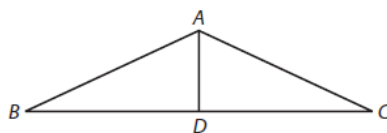
7. $m\angle H$

$$\begin{aligned} 9y + 17 &= 11y - 1 \\ \cancel{9y} + 17 &\quad \cancel{-9y} + 1 \\ \hline 18 &= 2y \\ \frac{18}{2} &\quad \frac{2y}{2} \\ 9 &= y \end{aligned}$$

Example 3 Write each proof.

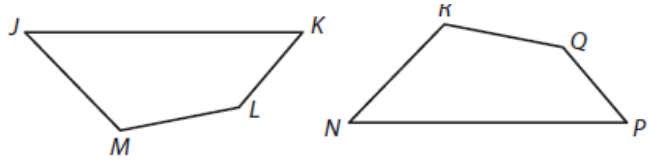
(A) Given: $\triangle ABD \cong \triangle ACD$

Prove: D is the midpoint of \overline{BC} .



Statements	Reasons
1. $\triangle ABD \cong \triangle ACD$	1. Given
2. $\overline{BD} \cong \overline{CD}$	2. Corresponding parts of congruent figures are congruent.
3. D is the midpoint of \overline{BC} .	3. Definition of midpoint.

B) Given: Quadrilateral $\overline{JKLM} \cong$ quadrilateral \overline{NPQR} ; $\angle J \cong \angle K$
 Prove: $\angle J \cong \angle P$



Statements	Reasons
1. Quadrilateral $\overline{JKLM} \cong$ quadrilateral \overline{NPQR}	1. <i>Given</i>
2. $\angle J \cong \angle K$	2. <i>Given</i>
3. $\angle K \cong \angle P$	3. <i>CPCFC</i>
4. $\angle J \cong \angle P$	4. <i>Transitive POC</i>

pg. 144-145

#2-9

