

Warm Up

1. What does it mean for two figures to be congruent?

Same measure

2. In triangle ABC , if $m\angle A = 64^\circ$ and $m\angle B = 71^\circ$ what is $m\angle C$

$$\begin{array}{c}
 \text{triangle } ABC \\
 \text{top side: } 8x - 9 \\
 \text{left side: } 9x - 2 \\
 \text{right side: } 6x + 7 \\
 m\angle C = 45^\circ
 \end{array}$$

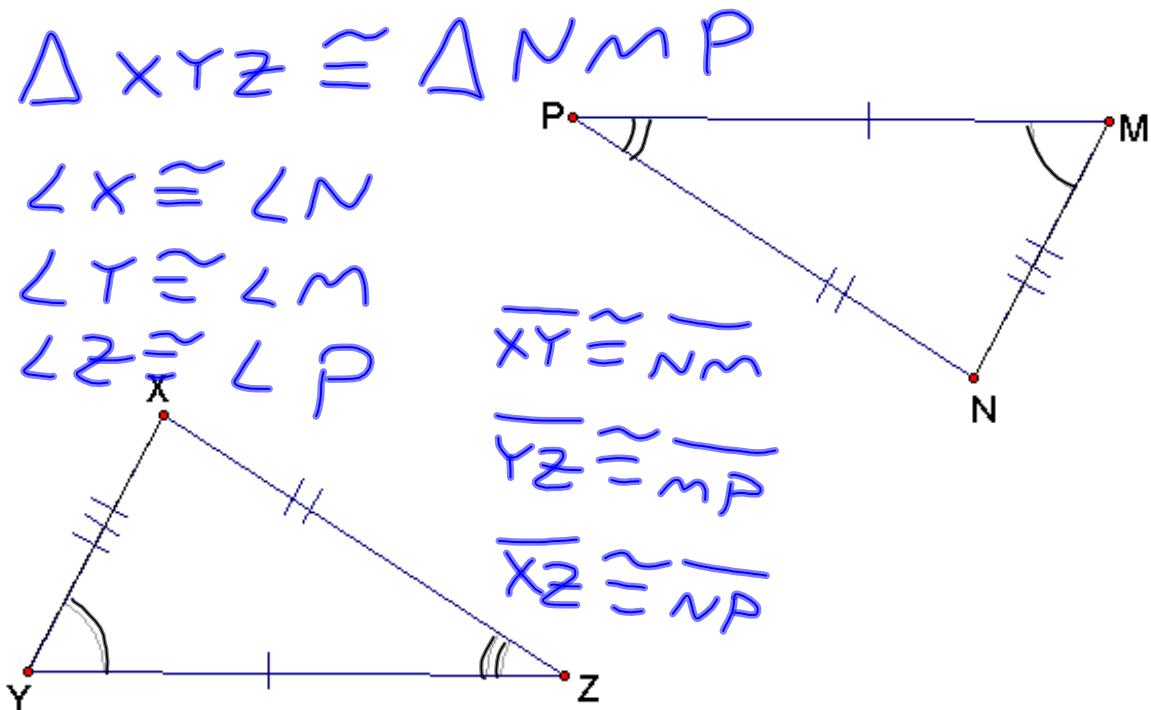
$$\begin{aligned}
 0x - 9 + 9x - 2 + 6x + 7 &= 180 \\
 23x - 4 &= 180 \\
 +4 & \\
 23x &= 184 \\
 \frac{23x}{23} &= \frac{184}{23} \\
 x &= 8
 \end{aligned}$$

4-2 Congruence and Triangles

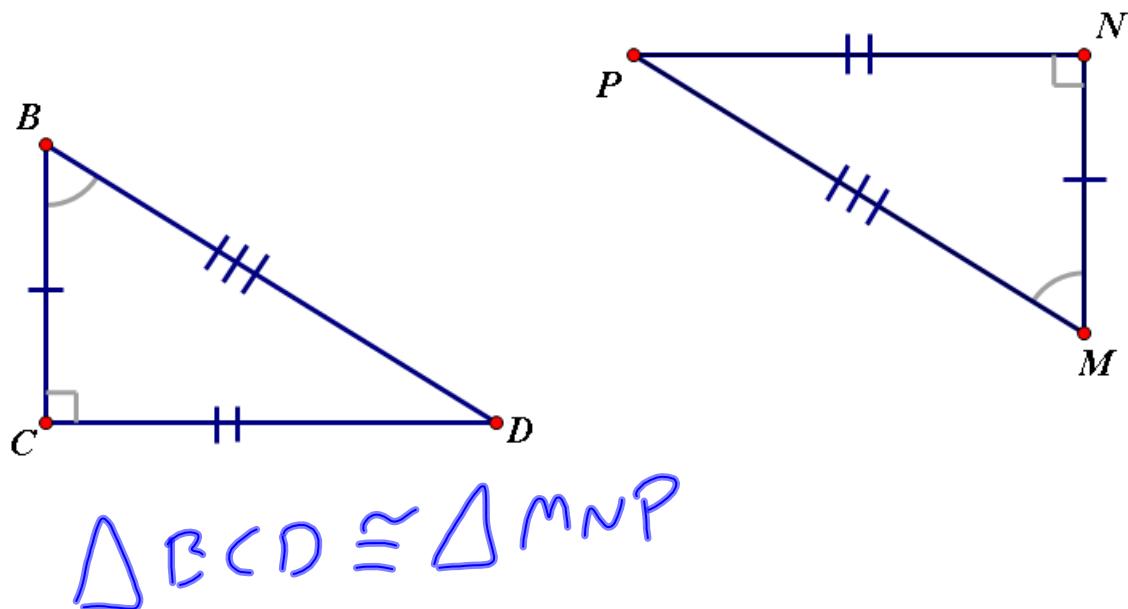
Congruent - *Same measures*

Third angles theorem - *if you know 2 angle measures of a \triangle , then you know the third*

Ex 1 Write a congruence statement for the triangles shown.
Identify all pairs of congruent corresponding parts.

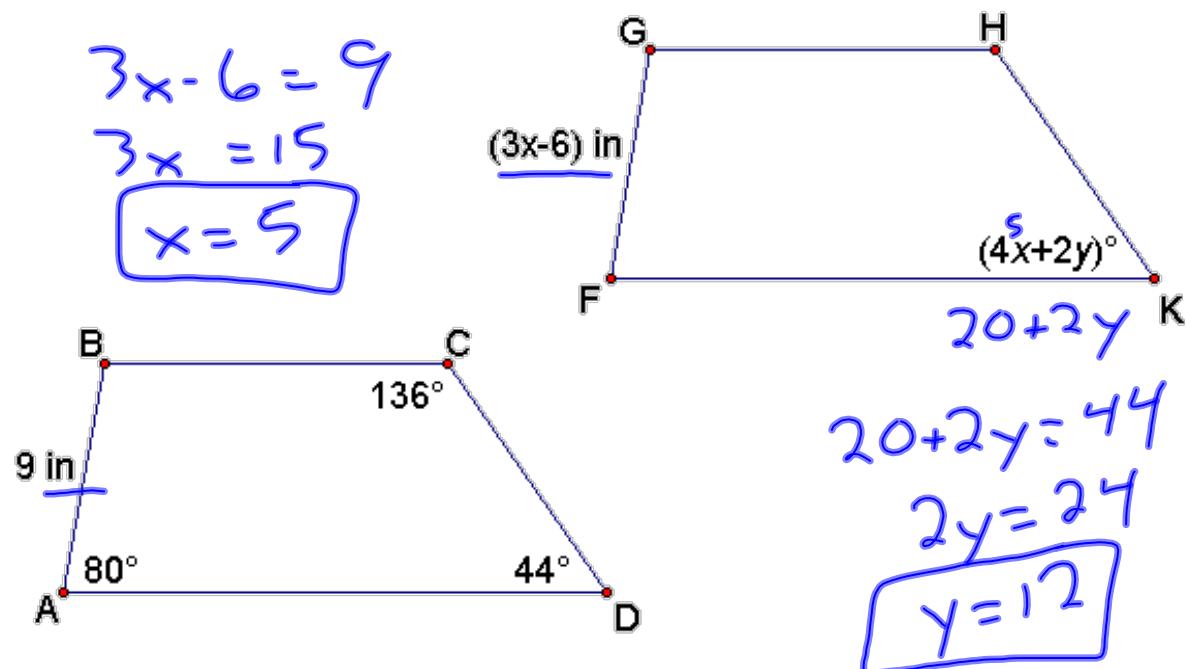


Ex 2 Write a congruence statement for the triangles shown.
Identify all pairs of congruent corresponding parts.

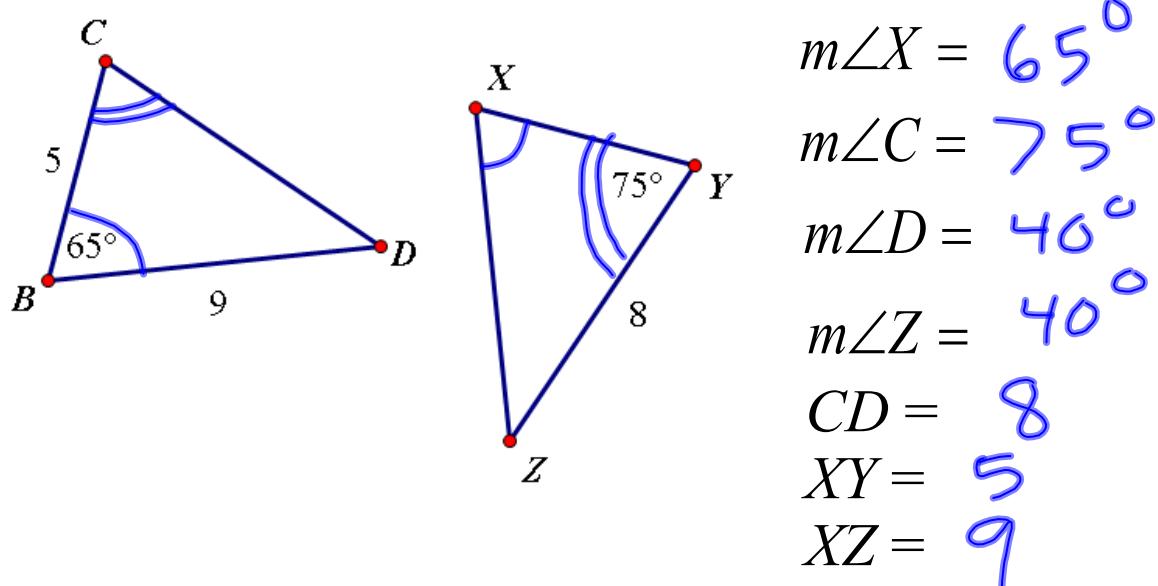


Ex 3 In the diagram, $ABCD \cong FGHK$

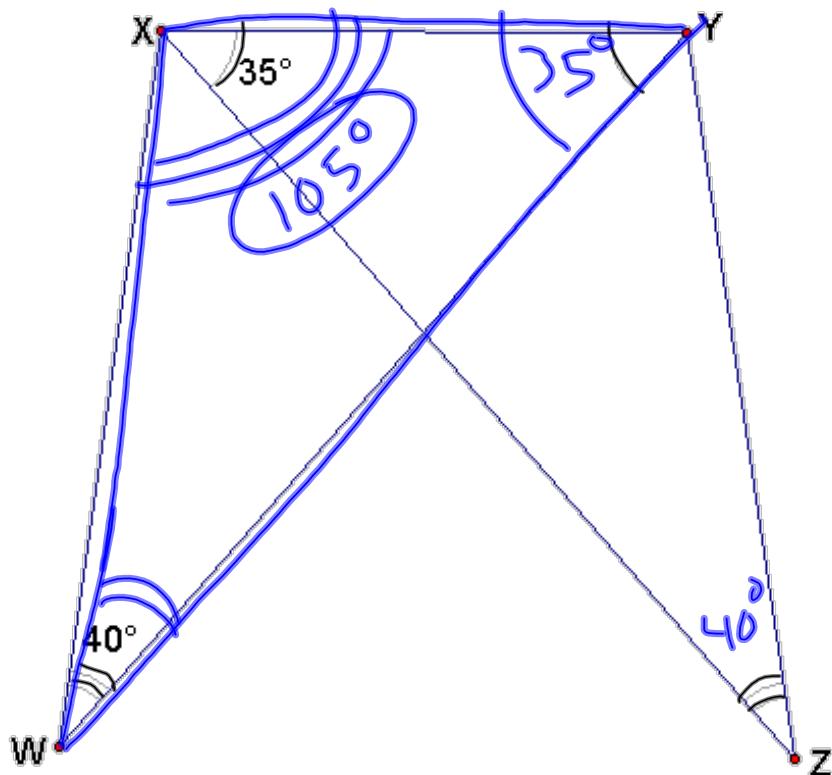
Find the value of x and y



Ex 4 In the diagram, $\triangle BCD \cong \triangle XYZ$



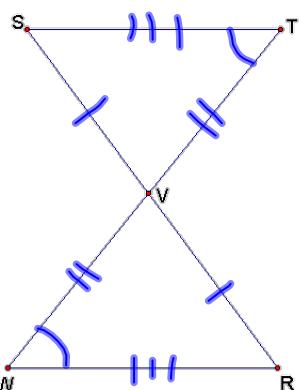
Ex 5 Find $m\angle YXW$



Ex 6 Write a two-column proof.

Given: $\overline{SV} \cong \overline{RV}, \overline{TV} \cong \overline{WV}$,
 $\overline{ST} \cong \overline{RW}, \angle T \cong \angle W$

Prove: $\triangle STV \cong \triangle RWV$



Statements	Reasons
$\overline{SV} \cong \overline{RV}$	$\overline{TV} \cong \overline{WV}$
$\overline{ST} \cong \overline{RW}$	$\angle T \cong \angle W$
$\angle WVR \cong \angle SVT$	V.A. \cong J.H.m.
$\angle S \cong \angle R$	$3^{\text{rd}} \angle \cong \text{J.H.m.}$
$\triangle STV \cong \triangle RWV$	D.P. \cong