

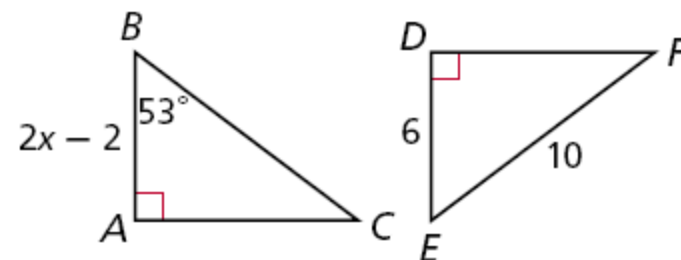
4-3 Congruent Triangles

BELLWORK

Given: $\triangle ABC \cong \triangle DEF$

1. Find the value of x .

2. Find $m\angle F$.



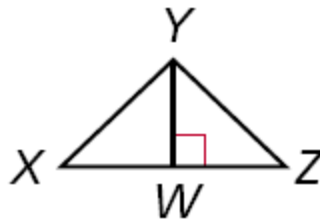
4-3 Congruent Triangles

Example 3: Proving Triangles Congruent

Given: $\angle YWX$ and $\angle YWZ$ are right angles.

\overline{YW} bisects $\angle XYZ$. W is the midpoint of \overline{XZ} . $\overline{XY} \cong \overline{YZ}$.

Prove: $\triangle XYW \cong \triangle ZYW$



4-3 Congruent Triangles

Statements	Reasons
1. $\angle YWX$ and $\angle YWZ$ are rt. \angle s.	1. Given
2. $\angle YWX \cong \angle YWZ$	2. Rt. $\angle \cong$ Thm.
3. YW bisects $\angle XYZ$	3. Given
4. $\angle XYW \cong \angle ZYW$	4. Def. of bisector
5. W is mdpt. of \overline{XZ}	5. Given
6. $\overline{XW} \cong \overline{ZW}$	6. Def. of mdpt.
7. $\overline{YW} \cong \overline{YW}$	7. Reflex. Prop. of \cong
8. $\angle X \cong \angle Z$	8. Third \angle s Thm.
9. $\overline{XY} \cong \overline{YZ}$	9. Given
10. $\triangle XYW \cong \triangle ZYW$	10. Def. of $\cong \triangle$

4-3 Congruent Triangles

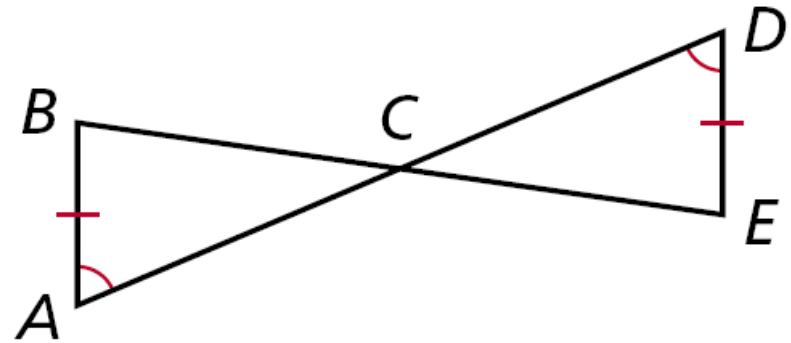
Check It Out! Example 3

Given: \overline{AD} bisects \overline{BE} .

\overline{BE} bisects \overline{AD} .

$\overline{AB} \cong \overline{DE}$, $\angle A \cong \angle D$

Prove: $\triangle ABC \cong \triangle DEC$



4-3 Congruent Triangles

Statements	Reasons
1. $\angle A \cong \angle D$	1. Given
2. $\angle BCA \cong \angle DCE$	2. Vertical \angle s are \cong .
3. $\angle ABC \cong \angle DEC$	3. Third \angle s Thm.
4. $\overline{AB} \cong \overline{DE}$	4. Given
5. \overline{AD} bisects \overline{BE} , \overline{BE} bisects \overline{AD}	5. Given
6. $\overline{BC} \cong \overline{EC}$, $\overline{AC} \cong \overline{DC}$	6. Def. of bisector
7. $\triangle ABC \cong \triangle DEC$	7. Def. of $\cong \Delta$ s