

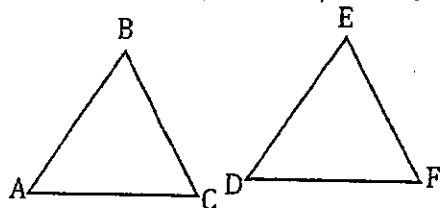
Name: _____ Date: _____ Period: _____

Your turn! Write an analysis of each proof involving congruent triangles.

1.

Analysis:

Given: $\overline{BC} \cong \overline{EF}$, $\angle B \cong \angle E$, and $\angle C \cong \angle F$



Prove: $\triangle ABC \cong \triangle DEF$

Statements	Reasons
1. $\overline{BC} \cong \overline{EF}$	1. Given
2. $\angle B \cong \angle E$	2. Given
3. $\angle C \cong \angle F$	3. Given
4. $\triangle ABC \cong \triangle DEF$	4. ASA

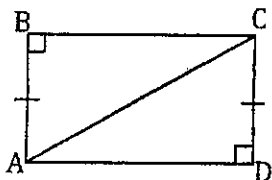
Analysis:

Working backward we must ask the key question, "How can we show that two triangles are congruent?" The answer? A triangle congruence theorem like SSS, SAS, ASA, AAS

but which one? To find out, start working forward. Listing all of the given information gives us a pair of angles $\angle A$ and $\angle D$ sandwiched between a pair of congruent sides $\overline{AB} \cong \overline{DE}$ and $\overline{AC} \cong \overline{DF}$. So this means we have $\triangle ABC \cong \triangle DEF$ by the SAS theorem

2.

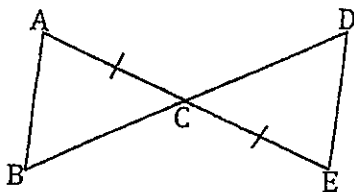
Given: $\overline{AB} \cong \overline{DC}$



Prove: $\triangle ABC \cong \triangle CDA$

Statements	Reasons
1.	1. Given
2.	2.
3.	3.
4.	4.
3.	

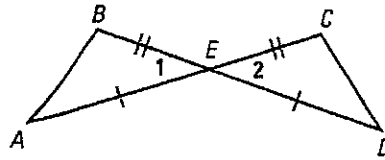
Given $\overline{AB} \parallel \overline{ED}$, $\overline{AC} \cong \overline{EC}$



Prove: $\triangle ABC \cong \triangle EDC$

Statements	Reasons
1. $\overline{AB} \parallel \overline{ED}$	1. Given
2. $\overline{AC} \cong \overline{EC}$	2. Given
3. $\angle A \cong \angle E$	3. Alternate Interior angles <i>AIAT</i>
4. $\angle ACB \cong \angle DCE$	4. Vertical angles <i>Theorem VAT</i>
5. $\triangle ABC \cong \triangle EDC$	5. ASA

4. Prove that $\triangle AEB \cong \triangle DEC$.

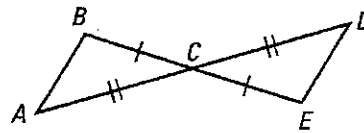


Statements	Reasons
1.	1.
2.	2.
3.	3.
4.	4.

5. Fill in the missing statements and reasons.

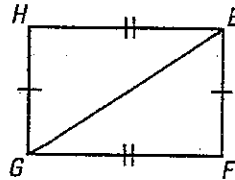
Given $\triangleright \overline{CB} \cong \overline{CE}, \overline{AC} \cong \overline{DC}$

Prove $\triangleright \triangle BCA \cong \triangle ECD$



Statements	Reasons
1. $\overline{CB} \cong \overline{CE}$	1. _____ ?
2. _____ ?	2. Given
3. $\angle BCA \cong \angle ECD$	3. _____ ?
4. $\triangle BCA \cong \triangle ECD$	4. _____ ?

6. Given $\triangleright \overline{EF} \cong \overline{GH}$
 $\overline{FG} \cong \overline{HE}$
 Prove $\triangleright \triangle EFG \cong \triangle GHE$



Statements	Reasons
1. $\overline{EF} \cong \overline{GH}$	1. Given
2. $\overline{FG} \cong \overline{HE}$	2. _____ ?
3. $\overline{GE} \cong \overline{GE}$	3. _____ ?
4. $\triangle EFG \cong \triangle GHE$	4. _____ ?