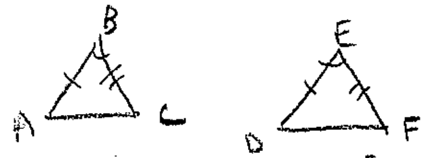
Geometry Honors
Chapter 4-1 to 4-3

Name Key

Do you have enough information to prove that $\Delta ABC \cong \Delta DEF$? If so, name the postulate/theorem. If not, write "not congruent". You may want to draw the example.

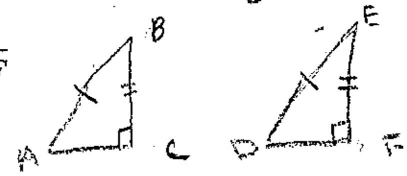
1) $\overline{AB} \cong \overline{DE}$; $\overline{BC} \cong \overline{EF}$; $\angle B \cong \angle E$

yes - SAS



2) $\angle C$ and $\angle F$ are right angles; $\overline{AB} \cong \overline{DE}$; $\overline{BC} \cong \overline{EF}$

No



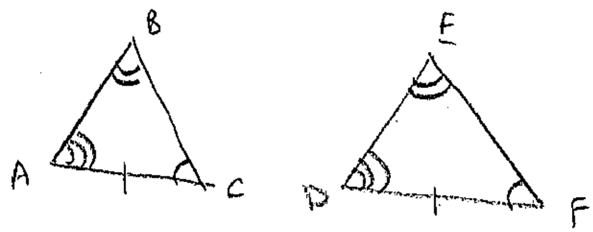
3) $\angle E \cong \angle B$; $\angle F \cong \angle C$; $\angle \cancel{B}\, A \cong \angle D$

NO

4) $\overline{CA} \cong \overline{FD}$; $\angle C \cong \angle F$; $\angle B \cong \angle E$

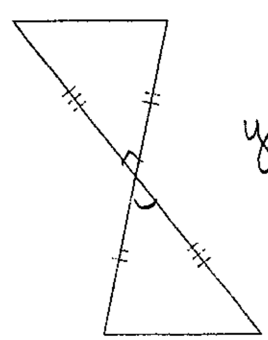
Yes - 2 $\angle$s $\cong$, 3rd $\angle \cong$ so $\angle A \cong \angle D$

ASA



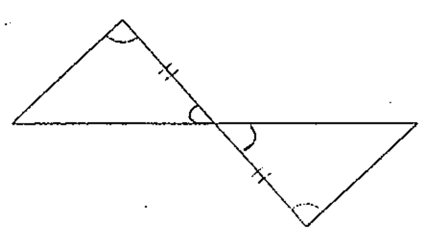
State if the two triangles are congruent. If they are, state how you know.

5.



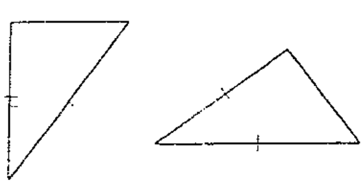
yes - SAS

6.



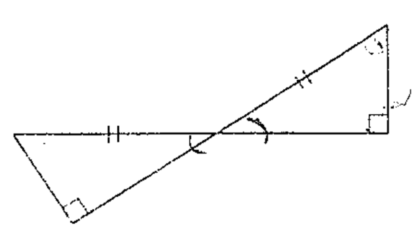
yes - ASA

7.



No

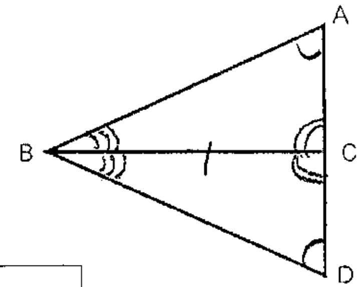
8.



(show 3rd $\angle \cong$)

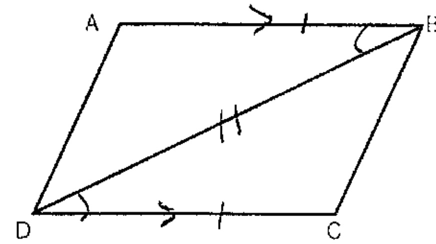
ASA

Write a 2-column proof for each of the following:



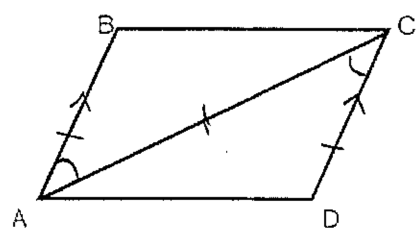
9) Given: $\overline{BC} \perp \overline{AD}$; $\angle A \cong \angle D$
Prove: $\Delta ABC \cong \Delta DBC$

1. $\overline{BC} \perp \overline{AD}$; $\angle A \cong \angle D$	1. Given
2. $\angle BCD \cong \angle BCA$	2. $\perp$ lines form $\cong$ adj. $\angle$s
3. $\angle ABC \cong \angle DBC$	3. if 2 $\angle$'s in 1 Δ $\cong$ to 2 $\angle$s in another Δ, then 3rd $\angle$s $\cong$
4. $\overline{BC} \cong \overline{BC}$	4. Reflexive
5. $\Delta ABC \cong \Delta DBC$	5. ASA



10) Given: $\overline{AB} \parallel \overline{DC}$; $DC = AB$
Prove: $\Delta ADB \cong \Delta CBD$

1. $\overline{AB} \parallel \overline{DC}$; $DC = AB$	1. Given
2. $\overline{DC} \cong \overline{AB}$	2. def. $\cong$
3. $\angle ABD \cong \angle CDB$	3. $\parallel$ lines $\rightarrow$ alt. int. $\angle$s $\cong$
4. $\overline{DB} \cong \overline{DB}$	4. Reflexive
5. $\Delta ADB \cong \Delta CBD$	5. SAS



11) Given: $\overline{AB} \parallel \overline{DC}$; $\overline{AB} \cong \overline{CD}$
Prove: $\angle B \cong \angle D$

1. $\overline{AB} \parallel \overline{DC}$; $\overline{AB} \cong \overline{CD}$	1. Given
2. $\angle ACD \cong \angle BAC$	2. $\parallel$ lines $\rightarrow$ Alt. int. $\angle$s $\cong$
3. $\overline{AC} \cong \overline{AC}$	3. Reflexive
4. $\Delta ABC \cong \Delta CDA$	4. SAS
5. $\angle B \cong \angle D$	5. CPCTC