

Mr. Hansen

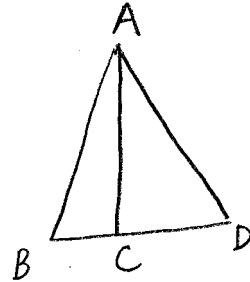
Geom. HW due 10/29/2008

[excerpt]

§5.1 #1

1. Given: $\overline{AB} \cong \overline{AD}$
 $\angle BAC \not\cong \angle DAC$

Prove: $\overline{BC} \not\cong \overline{DC}$



1. $\overline{AB} \cong \overline{AD}$
2. $\angle BAC \not\cong \angle DAC$
3. $\overline{BC} \cong \overline{DC}$
4. $\overline{AC} \cong \overline{AC}$
5. $\triangle ACB \cong \triangle ACD$
6. $\angle BAC \cong \angle DAC$

1. G

2. G

3. Assumed bwoc

4. Refl.

5. SSS (1, 3, 4)

6. CPCTC

($\rightarrow \leftarrow$) 2, 6

[Note: The proof ends at step 6, because we have contradicted one of the givens. Instead of writing Q.E.D. or the Halmos sign, we usually use the colliding arrows ($\rightarrow \leftarrow$) to show that a contradiction has occurred.

Any step that contradicts any of the givens or a known mathematical fact can be used as the ending step in a proof by contradiction. [WARNING: Students sometimes get confused about how to use "bwoc" in a proof. Use bwoc in the step that negates the conclusion (step 3 in this example). Never use bwoc to negate a given.]