# Indirect Proofs

6-1 The Coordinates of a Point in a Plane
(pages 213-214)

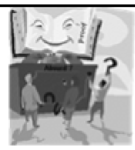
1) $\overline{BC}$ must be vertical, BC = AC = 7.

B is (5, 3) or (5,-11)

3. b. 14 sq units
5. b. 20 sq units
7. b. 21 sq units
9. b. 20 sq units
11. b. 10 sq units
13. D(1, 4)
15. a. Graph
b. 24 sq units

Agenda:
1)Do Now: review HW
2) Example Indirect Proof
3) Practice Indirect Proofs in pairs
4)Get TINSPIRE program on calcs

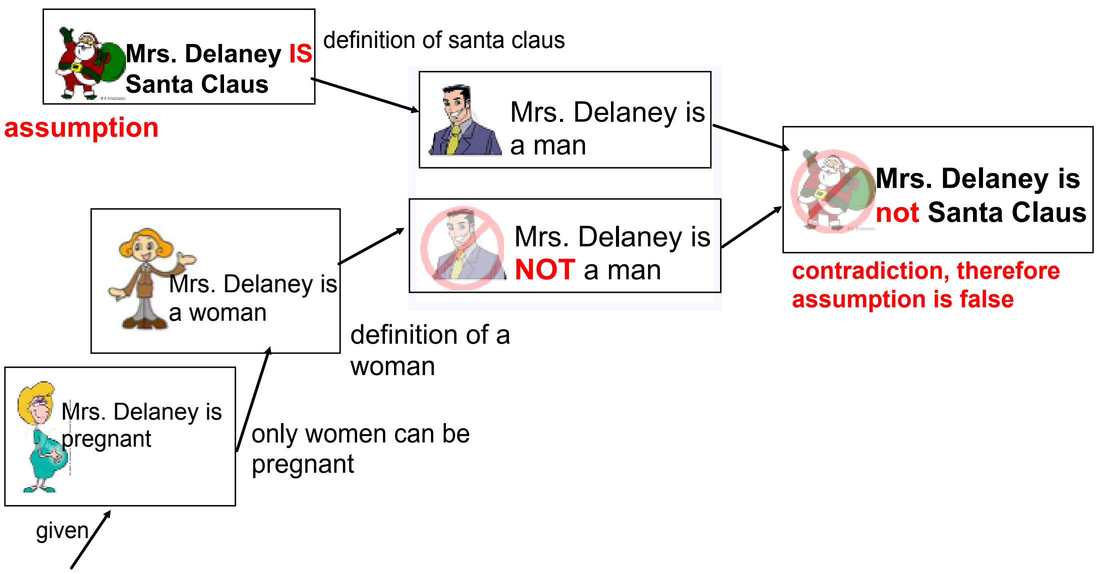
## Indirect Proof:



How would you prove, in a court of law, that Mrs. Delaney was *NOT* Santa Claus?

Given: Mrs. Delaney is our pregnant math teacher.

Prove: Mrs. Delaney is **NOT** Santa Claus



**Steps in an Indirect Proof:**

- Assume that the *opposite* of what you are trying to prove is true.
- From this assumption, see what conclusions can be drawn.
- Search for a conclusion that you know is **false** because it contradicts GIVEN or known information. If the assumption must be false- then what you are trying to prove must be true.

### When is an indirect proof needed?

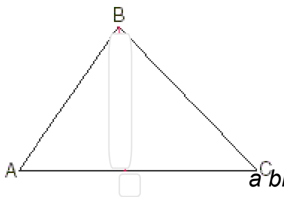
Generally, the word "not" or the presence of a "not symbol" (such $\neq$ ) in a problem indicates a need for an Indirect Proof.

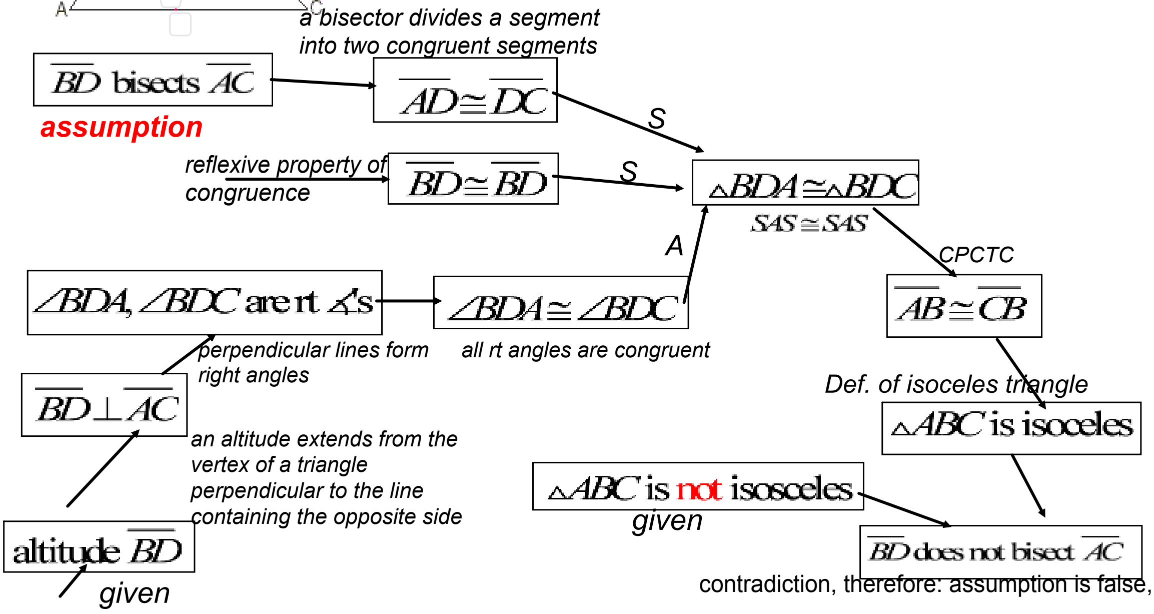
**Example:**

In the accompanying diagram, $\triangle ABC$ is *not* isosceles.
Prove that if altitude $\overline{BD}$ is drawn, it will *not* bisect $\overline{AC}$.

Given: $\triangle ABC$ is *not* isosceles. altitude $\overline{BD}$

Prove: $\overline{BD}$ does not bisect $\overline{AC}$



Attachments

Indirect%20Proofs.pdf