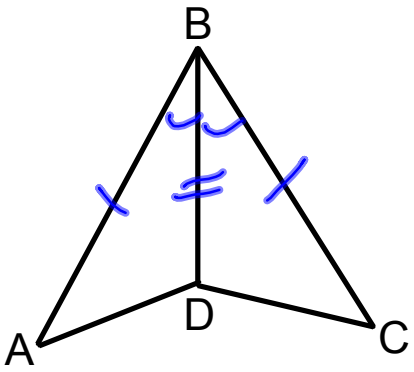
Do-now: Turn in classwork from yesterday into basket.



Given: BD bisects $\angle ABC$

$\overline{AB} \cong \overline{CB}$

Prove: $\overline{AD} \cong \overline{CD}$

Since BD bisects $\angle ABC$, $\angle ABD \cong \angle CBD$. $\overline{BD} \cong \overline{BD}$ b/c of the REFLEXIVE property. $\triangle ABD \cong \triangle CBD$ b/c of SAS. $\therefore \overline{AD} \cong \overline{CD}$ b/c of CPCTC.

Two-Column Proof

STATEMENTS	REASONS
1.	1.
2.	2.
3.	3.
.	.
.	.
.	.
#.	#.

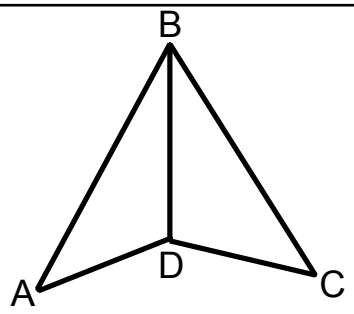
If you claim a statement is true that is dependent upon OTHER information, you MUST STATE that information FIRST!

For example, if you state two triangles are congruent because of SAS, there must be three statements (and reasons) prior to this that provides:

1. The first pair of congruent sides (S)
2. The pair of congruent angles (A)
3. The second pair of congruent sides (S)

Given: $\overline{AB} \cong \overline{CB}$
$\overline{BD}$ bisects $\angle ABC$

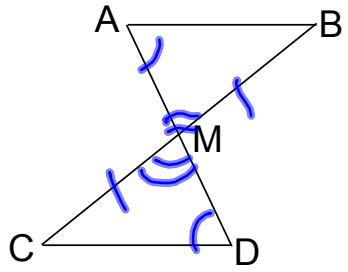
Prove: $\overline{AD} \cong \overline{CD}$



STATEMENTS	REASONS
1. $\overline{AB} \cong \overline{CB}$	1. Given
2. $\overline{BD}$ bisects $\angle ABC$	2. Given
3. $\angle ABD \cong \angle CBD$	3. Def. of bisect
4. $\overline{BD} \cong \overline{BD}$	4. Reflexive Prop.
5. $\triangle ABD \cong \triangle CBD$	5. SAS
6. $\overline{AD} \cong \overline{CD}$	6. CPCTC

Given: $\overline{AB} \parallel \overline{DC}$
M is the midpoint of $\overline{BC}$

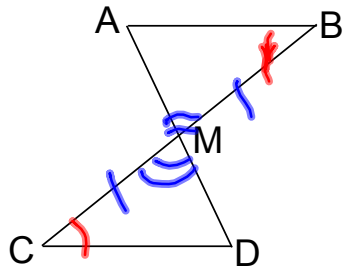
Prove: $\overline{AB} \cong \overline{DC}$



STATEMENTS	REASONS
1. $\overline{AB} \parallel \overline{DC}$	1. Given
2. $\angle A \cong \angle D$	2. Alt. Int. $\angle$s are $\cong$
3. M is the mdpt of $\overline{BC}$	3. Given
4. $\overline{BM} \cong \overline{CM}$	4. Def. of a midpoint
5. $\angle AMB \cong \angle DMC$	5. Vertical $\angle$s are $\cong$
6. $\triangle AMB \cong \triangle DMC$	6. AAS
7. $\overline{AB} \cong \overline{DC}$	7. CPCTC

Given: $\overline{AB} \parallel \overline{DC}$
M is the midpoint of $\overline{BC}$

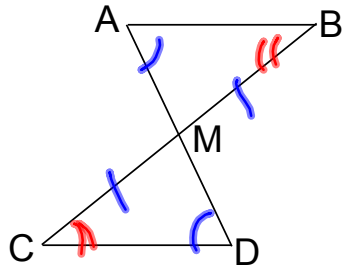
Prove: $\overline{AB} \cong \overline{DC}$



STATEMENTS	REASONS
1. $\overline{AB} \parallel \overline{DC}$	1. Given
2. $\angle B \cong \angle C$, A	2. Alt. Int. $\angle$s are $\cong$
3. M is the mdpt of $\overline{BC}$	3. Given
4. $\overline{BM} \cong \overline{CM}$ S	4. Def. of a midpoint
5. $\angle AMB \cong \angle DMC$ A	5. Vertical $\angle$s are $\cong$
6. $\triangle AMB \cong \triangle DMC$	6. ASA
7. $\overline{AB} \cong \overline{DC}$	7. CPCTC

Given: $\overline{AB} \parallel \overline{DC}$
M is the midpoint of $\overline{BC}$

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



STATEMENTS	REASONS
1. $\overline{AB} \parallel \overline{DC}$	1. Given
2. $\angle A \cong \angle D$	2. Alt. Int. $\angle$s are $\cong$
3. M is the mdpt of $\overline{BC}$	3. Given
4. $\overline{BM} \cong \overline{CM}$	4. Def. of a midpoint
5. $\angle B \cong \angle C$	5. Alt. int. $\angle$s are $\cong$
6. $\triangle AMB \cong \triangle DMC$	6. AAS
7. $\overline{AB} \cong \overline{DC}$	7. CPCTC

February 07, 2014