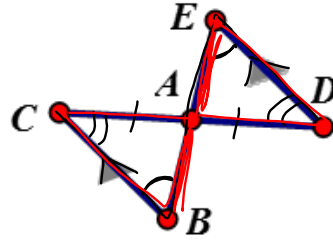


**DO NOW**

**GIVEN:**  $\overline{CB} \parallel \overline{ED}$   $\rightarrow$  alternate interior  $\angle$ 's  
 A is the midpoint of  $\overline{CD}$



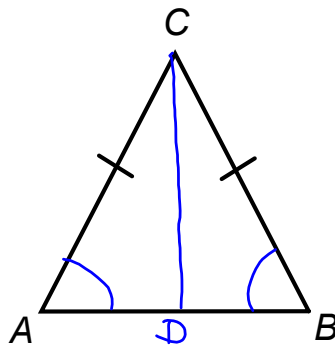
**PROVE:**  $\overline{BA} \cong \overline{EA}$

Statements	Reasons
1) $\overline{CB} \parallel \overline{ED}$ A is midpoint of $\overline{CD}$	1) Given
2) $\angle C \cong \angle D, \angle B \cong \angle E$	2) When lines are $\parallel$ , alt. int. $\angle$ 's are $\cong$
3) $\overline{CA} \cong \overline{DA}$	3) Midpoint creates 2 $\cong$ segments
4) $\triangle CBA \cong \triangle DEA$	4) AAS
5) $\overline{BA} \cong \overline{EA}$	5) CPCTC

Nov 5-10:13 AM

### Isosceles Triangle Theorem

If two sides of a triangle are congruent, the angles opposite those sides are congruent



If  $\overline{AC} \cong \overline{BC}$ , then  $\angle A \cong \angle B$

Nov 8-11:00 AM

Given: Isosceles  $\triangle ABC$  with  $\overline{AB} \cong \overline{BC}$ ,  $\overline{AD} \cong \overline{CE}$ , and  $F$  is the midpoint of  $\overline{AC}$ .

Prove:  $\overline{DF} \cong \overline{EF}$       Need:  $\triangle ADF \cong \triangle CEF$  by SAS

Statements	Reasons
1) Isosceles $\triangle ABC$ with $\overline{AB} \cong \overline{BC}$ , $\overline{AD} \cong \overline{CE}$ F is midpoint of $\overline{AC}$	1) Given
2) $\overline{AF} \cong \overline{CF}$	2) Midpoint creates 2 $\cong$ segments
3) $\angle DAF \cong \angle ECF$	3) Isosceles $\triangle$ 's have 2 $\cong$ base $\angle$ 's
4) $\triangle ADF \cong \triangle CEF$	4) SAS
5) $\overline{DF} \cong \overline{EF}$	5) CPCTC

Nov 8-11:16 AM

Given:  $\overline{AB} \perp \overline{BC}$ ,  $\overline{DC} \perp \overline{BC}$ , and  $\overline{AB} \cong \overline{DC}$ .

Prove:  $\triangle BEC$  is isosceles.

Need:  $\triangle ABC \cong \triangle DCB$

Statements	Reasons
1) $\triangle ABC \cong \triangle DCB$	SAS
$\angle ACB \cong \angle DBC$	CPCTC
$\triangle BEC$ is isosceles	Isos $\triangle$ have 2 $\cong$ $\angle$ 's

Nov 8-11:18 AM