4.4 Using Corresponding Parts of Congruent Triangles

Learning Targets for today

(SSS / SAS / ASA / AAS)

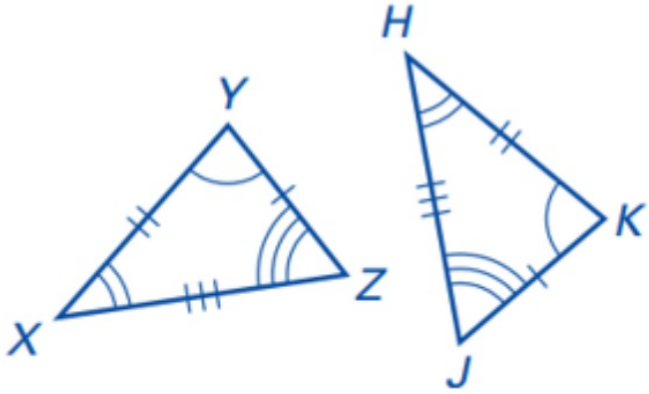
- To be able to use triangle congruence and corresponding parts of congruent triangles to prove that parts of two triangles are congruent.

CORRESPONDING PARTS OF CONGRUENT TRIANGLES ARE CONGRUENT!

**When you prove that two triangles (or figures) are congruent using a proof (SSS, SAS, AAS, ASA, etc.), the remaining parts of those figures <u>are also congruent</u>.

(C.P.C.F.)

Corresponding Parts of Congruent Figures

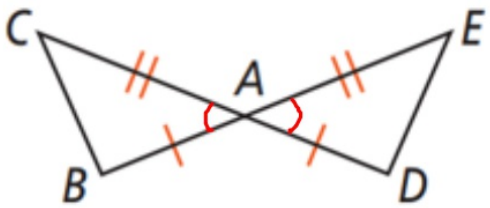


Proving Parts of Triangle Are Congruent

Example for you…

Complete the following proof.

1. Given: $\overline{BA} \cong \overline{DA}, \overline{CA} \cong \overline{EA}$
   Prove: $\angle C \cong \angle E$



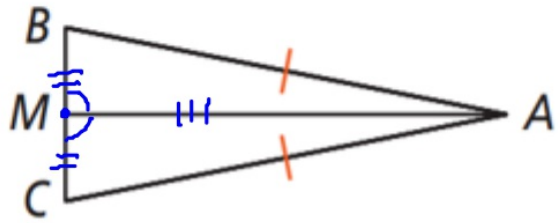
	Statements		*Reasons*
a.	$\overline{BA} \cong \overline{DA}$	a.	GIVEN
b.	$\overline{CA} \cong \overline{EA}$	b.	GIVEN
c.	$\angle CAB \cong \angle EAD$	c.	Vertical $\angle$'s
d.	$\triangle ABC \cong \triangle ADE$	d.	SAS
e.	$\angle C \cong \angle E$	e.	C.P.C.F. are $\cong$

Proving Parts of Triangle Are Congruent

Example for you…

Complete the following proof.

2. Given: $\overline{BA} \cong \overline{CA}$, M is the midpoint of $\overline{BC}$
   Prove: $\angle AMB \cong \angle AMC$



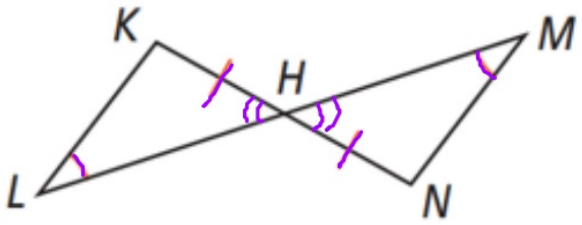
Statements	Reasons
a. $\overline{BA} \cong \overline{CA}$	a. Given
b. M is the midpoint of $\overline{BC}$	b. Given
c. $\overline{BM} \cong \overline{CM}$	c. Def. of Midpoint
d. $\overline{MA} \cong \overline{MA}$	d. Reflexive Prop.
e. $\triangle BMA \cong \triangle CMA$	e. SSS
f. $\angle AMB \cong \angle AMC$	f. C.P.C.F. are $\cong$

Proving Parts of Triangle Are Congruent

Your turn to try…

Complete the following proof.

3. Given: $\overline{KH} \cong \overline{NH}$, $\angle L \cong \angle M$
   Prove: $\overline{KL} \cong \overline{NM}$



	Statements		*Reasons*
a.	$\overline{KH} \cong \overline{NH}$	a.	GIVEN
b.	$\angle L \cong \angle M$	b.	GIVEN
c.	$\angle KHL \cong \angle NHM$	c.	Vertical $\angle$'s
d.	$\triangle KHL \cong \triangle NHM$	d.	AAS
e.	$\overline{KL} \cong \overline{NM}$	e.	C.P.C.F. are $\cong$