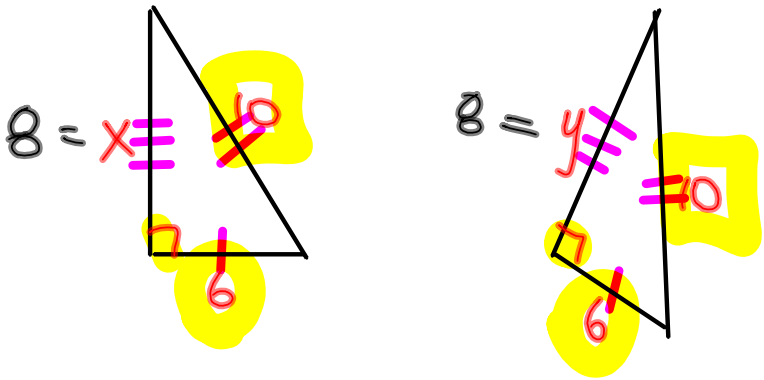
How do we prove congruent triangles?

Do Now Find x & y



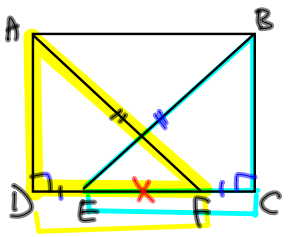
⇒ AAS justified by ASA

* if you know 2 ∠'s, then you know the 3rd ∠.

⇒ HL justified by SSS

* In a Rt. Δ, if you know 2 sides, you know the 3rd side

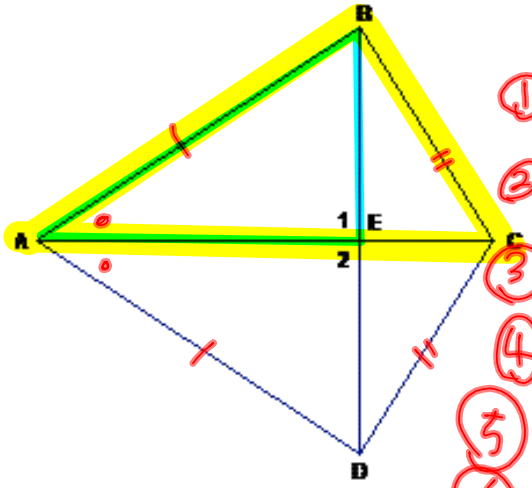
SSS
SAS
ASA
AAS
HL



Given: $\overline{AD} \perp \overline{DC}$, $\overline{BC} \perp \overline{DC}$
$\overline{DE} \cong \overline{FC}$
$\overline{AF} \cong \overline{BE}$
prove: $\triangle ADF \cong \triangle BCE$

Statements	Reasons
①	Given.
② $\overline{EF} \cong \overline{EF}$	Reflexive
③ $\overline{DF} \cong \overline{CE}$	Addition.
④ $\angle C$ & $\angle D$ are Right $\angle$'s	$\perp$ lines form Rt $\angle$'s.
⑤ $\triangle ADF$ & $\triangle BCE$ are Rt $\triangle$'s	$\triangle$'s w/ a Rt $\angle$ are Rt $\triangle$'s.
⑥ $\triangle ADF \cong \triangle BCE$	HL.

Given: $\overline{AB} \cong \overline{AD}$ and $\overline{BC} \cong \overline{DC}$



Prove: $\measuredangle 1 \cong \measuredangle 2$

Statements	Reasons
①	Given
② $\overline{AC} \cong \overline{AC}$	Reflexive.
③ $\triangle ABC \cong \triangle ADC$	SSS
④ $\angle BAC \cong \angle DAC$	CPCTC
⑤ $\overline{AE} \cong \overline{AE}$	Reflexive
⑥ $\triangle ABE \cong \triangle ADE$	SAS
⑦ $\angle 1 \cong \angle 2$	CPCTC