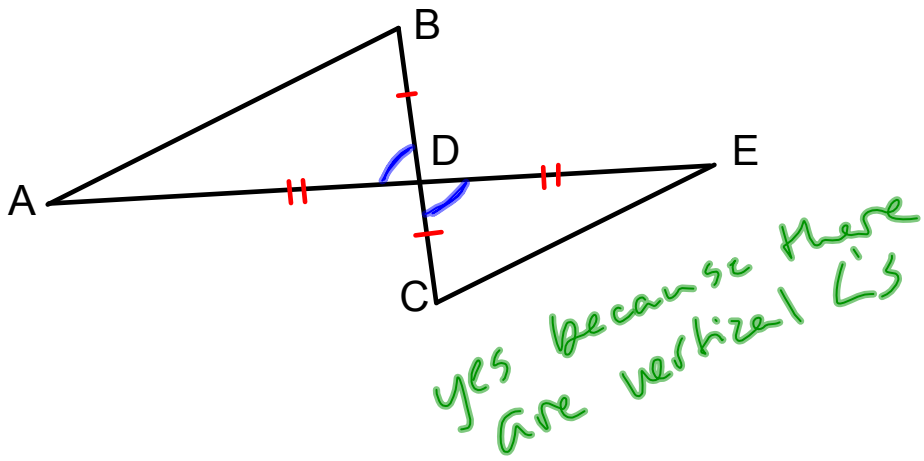
Exit Ticket:

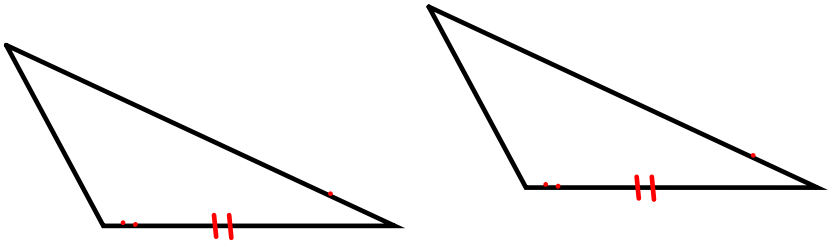
Are the triangles congruent by SAS? Why?



Chapter 4.5: Prove Triangles Congruent by ASA and AAS

Axiom 21: Angle-Side-Angle

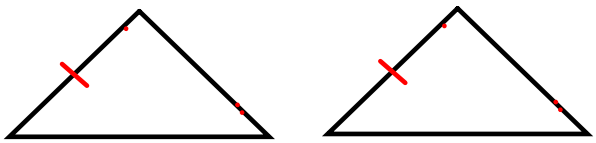
If 2 angles and the included side of one triangle are congruent to 2 angles and the included side of another triangle, then the triangles are congruent.



Angle-Angle-Side Congruence Theorem

If 2 angles and a non-included side of one triangle are congruent to 2 angles and a non-included side of another triangle, then the two triangles are congruent.

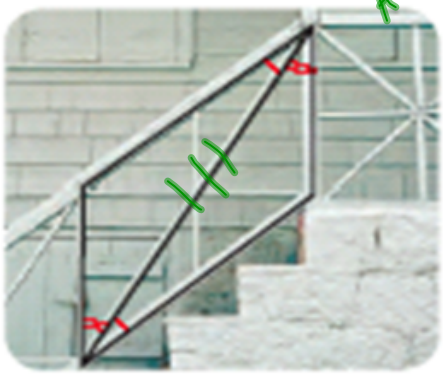
Proof!!!!



ex. Can the triangles be proven congruent with the information given in the picture? If so, state why.

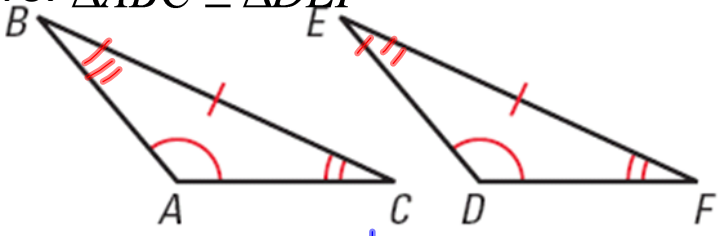
b.

c.



Given:

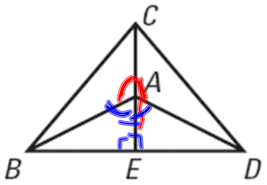
Prove: $\Delta ABC \cong \Delta DEF$



Statements	Reasons
1) $\angle BAC \cong \angle EDF$, $\angle ACB \cong \angle DFE$, $\overline{BC} \cong \overline{EF}$	1) Given
2) $\angle ABC \cong \angle DEF$	2) 3rd $\angle$ Thm.
3) $\Delta ABC \cong \Delta DEF$	2) ASA

Given: $\overline{CE} \perp \overline{BD}$
$\angle CAB \cong \angle CAD$

Prove: $\Delta ABE \cong \Delta ADE$



Statement	Reasons
1) $\overline{CE} \perp \overline{BD}$, $\angle CAB \cong \angle CAD$	1) Given
2) $\angle CAB$ & $\angle BAE$, $\angle CAD$ & $\angle DAE$ are supplementary	2) def of supplementary $\angle$'s
3) $\angle BAE \cong \angle DAE$	3) Congruent Supp Thm.
4) $\overline{AE} \cong \overline{AE}$	4) Reflexive
5) $\angle BEA$ & $\angle DEA$ are right $\angle$'s	5) def of $\perp$
6) $\angle BEA \cong \angle DEA$	6) Right $\angle$'s $\cong$
7) $\Delta BEA \cong \Delta DEA$	7) ASA

Homework: Ch 4.5 pg.252
#'s 4-14e,18,32,34