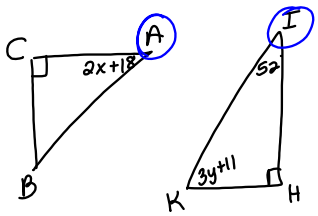
Congruent Triangles
(part 3)

titles



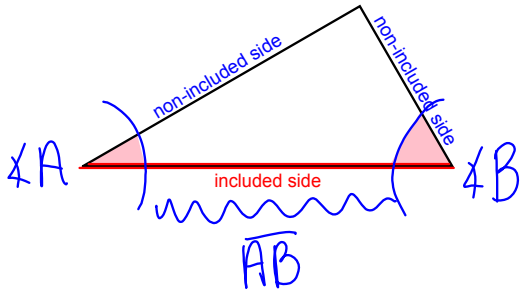
$\triangle ABC \cong \triangle IKH$

$2x+18=52$

Nov 2-8:30 AM

Included side vs. Non-included side

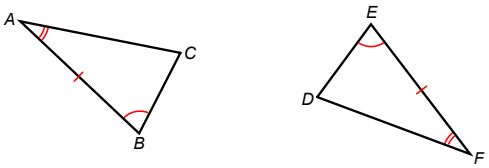
Included side—side connecting the vertices of two angles



included sides

Angle-Side-Angle (ASA) Congruence Postulate

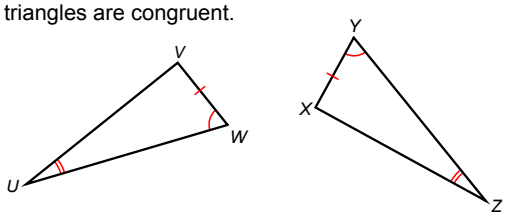
If two angles and the included side of one triangle are congruent to two angles and the included side of a second triangle, then the two triangles are congruent.



ASA

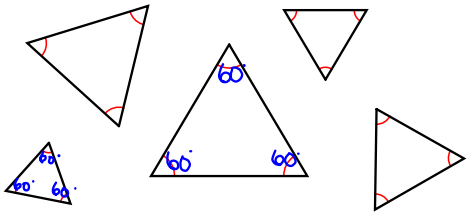
Angle-Angle-Side (AAS) Congruence Theorem

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



AAS

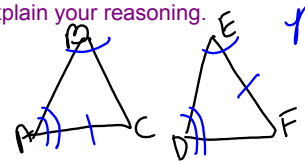
Angle-Angle-Angle is *not* a valid method for proving triangles are congruent.



no AAA

Use the given information to determine whether or not $\Delta ABC \cong \Delta DEF$. Explain your reasoning.

Given: $\angle E \cong \angle B$
$\angle A \cong \angle D$
$\overline{FE} \cong \overline{CA}$



Not ≅

Given: $\angle D \cong \angle A$
$\angle B \cong \angle E$
$\angle F \cong \angle C$

Not ≅

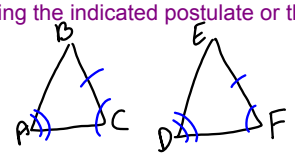
examples

State the additional information that is needed to prove $\Delta ABC \cong \Delta DEF$ using the indicated postulate or theorem.

Given: $\overline{BC} \cong \overline{EF}$
$\angle F \cong \angle C$

Method: AAS

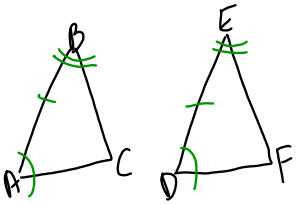
$\angle A \cong \angle D$



Given: $\angle D \cong \angle A$
$\angle B \cong \angle E$

Method: ASA

$\overline{AB} \cong \overline{DE}$



examples

Conclusion

1. What ways can you prove triangles congruent?

SSS, SAS, HL, ASA, AAS

2. Are all triangles congruent? NO

3. Does order matter in writing the letters when proving triangles congruent?

Yes

Nov 2-8:21 AM