



4.5 & 4.6 Congruent Triangles

- 4.5 Prove triangles congruent using SSS and SAS
- 4.6 Prove triangles congruent using AAS and ASA

Activity Recap

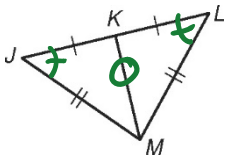
What are the different shortcuts we can use to prove two triangles congruent? Draw a diagram for each.

SSS	SAS	ASA	AAS	HL

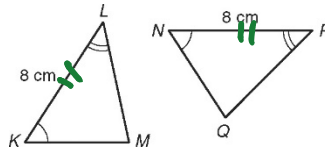
★ Notice! SSA or AAA is NOT a way to prove Δ 's congruent!

For 1-6, decide whether enough information is given to prove that the triangles are congruent. If possible, give the congruence statement AND postulate you would use.

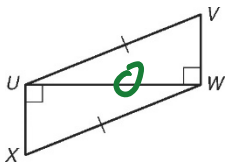
1. $\triangle JKM \cong \triangle LKM$ BY: SSS
or SAS



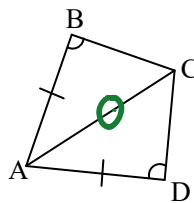
2. $\triangle LKM \cong \triangle PNQ$ BY: ASA



3. $\triangle UVW \cong \triangle XWV$ BY: HL

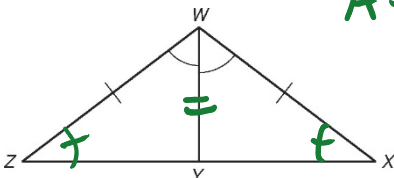


4. _____ \cong _____ BY: Not \cong

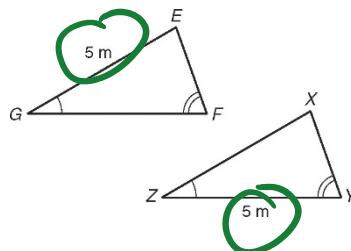


(SSA not a way of proving Δ 's \cong)

5. $\triangle WYZ \cong \triangle WYX$ BY: SAS
or ASA



6. _____ \cong _____ BY: Not \cong



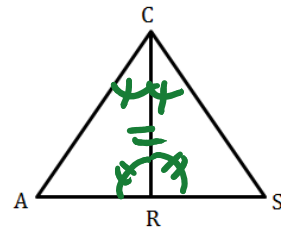
(sides do not correspond!)

Proof! I mean...Proof!

Given: \overline{CR} bisects $\angle ACS$

$\angle CRA \cong \angle CRS$

Prove: $\triangle CRA \cong \triangle CRS$



Statements

Reasons

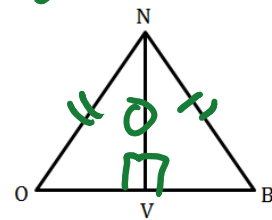
- ① \overline{CR} bis. $\angle ACS$
- A ② $\angle ACR \cong \angle SCR$
- A ③ $\angle CRA \cong \angle CRS$
- S ④ $\overline{CR} \cong \overline{CR}$
- ⑤ $\triangle CRA \cong \triangle CRS$

- ① Given
- ② \angle Bis. \Rightarrow 2 \cong \angle 's
- ③ Given
- ④ Reflexive Property
- ⑤ ASA (2,4,3)

Given: $\overline{NV} \perp \overline{OB}$

$\overline{ON} \cong \overline{BN}$

Prove: $\triangle ONV \cong \triangle BNV$



Statements

Reasons

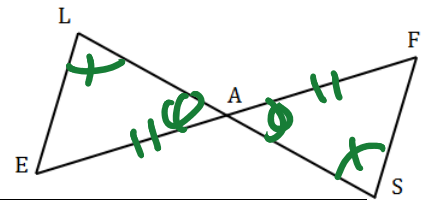
- ① $\overline{NV} \perp \overline{OB}$
- R ② $\angle NVO$ and $\angle NVB$ are rt \angle 's
- H ③ $\overline{ON} \cong \overline{BN}$
- L ④ $\overline{NV} \cong \overline{NV}$
- ⑤ $\triangle ONV \cong \triangle BNV$

- ① Given
- ② $\perp \Rightarrow$ rt \angle 's
- ③ Given
- ④ Reflexive Property
- ⑤ HL (2,3,4)

Given: A is the midpoint of \overline{EF}

$\angle ELA \cong \angle FSA$

Prove: $\triangle LAE \cong \triangle SFA$



Statements

Reasons

- ① A midpt. of \overline{EF}
- S ② $\overline{EA} \cong \overline{FA}$
- A ③ $\angle ELA \cong \angle FSA$
- A ④ $\angle LAE \cong \angle FAS$
- ⑤ $\triangle LAE \cong \triangle SFA$

- ① Given
- ② midpt. \Rightarrow 2 \cong segs.
- ③ Given
- ④ Vert. \angle 's are \cong .
- ⑤ AAS (3,4,2)