

Bellwork

10/19/2011

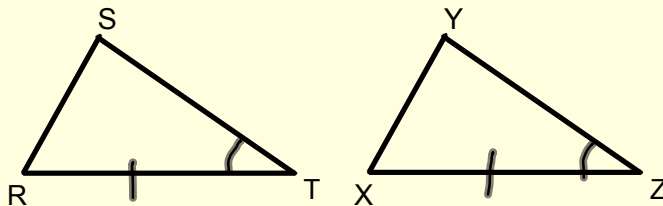
State a third congruence that would allow you to prove $\triangle RST \cong \triangle XYZ$ by the SAS Congruence Postulate.

1. $\overline{ST} \cong \overline{YZ}, \overline{RS} \cong \overline{XY}$

$$\angle S \cong \angle Y$$

2. $\angle T \cong \angle Z, \overline{RT} \cong \overline{XZ}$

$$\overline{ST} \cong \overline{YZ}$$



Geometry

4.5 Prove Triangles Congruent by ASA and AAS

Standard(s): 6,7

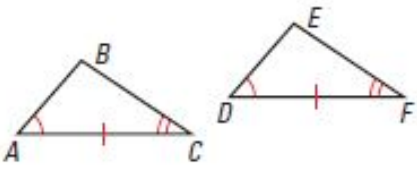
Vocabulary:

THEOREMS *For Your Notebook*

POSTULATE 21 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.

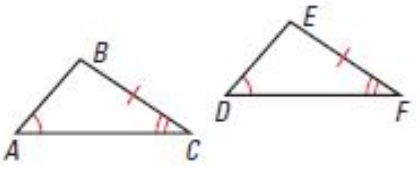
If Angle $\angle A \cong \angle D$,
 Side $\overline{AC} \cong \overline{DF}$, and
 Angle $\angle C \cong \angle F$,
 then $\triangle ABC \cong \triangle DEF$.



THEOREM 4.6 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.

If Angle $\angle A \cong \angle D$,
 Angle $\angle C \cong \angle F$, and
 Side $\overline{BC} \cong \overline{EF}$,
 then $\triangle ABC \cong \triangle DEF$.



How to prove \triangle 's \cong :

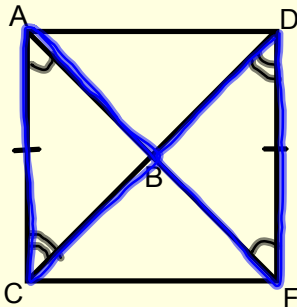
1. Def. of $\cong \triangle$'s
2. SSS Postulate
3. SAS Postulate
4. HL Theorem
5. ASA Postulate
6. AAS Theorem

Identify Congruent Triangles

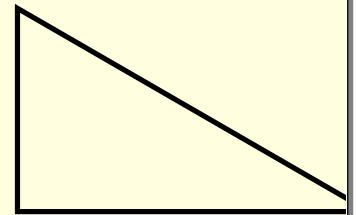
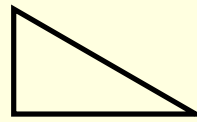
Can the triangles be proven congruent with the information given in the diagram? If so, state the postulate or theorem you would use.

$\triangle ABC \cong \triangle DBF$

A.

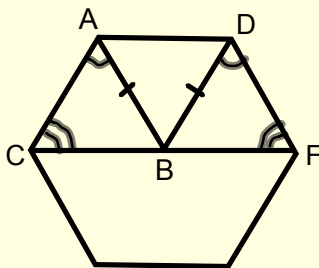


ASA Post.



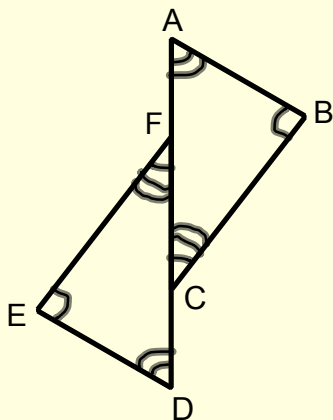
B.

$\triangle ABC \cong \triangle DBF$



AAS Thm.

C.



N/a

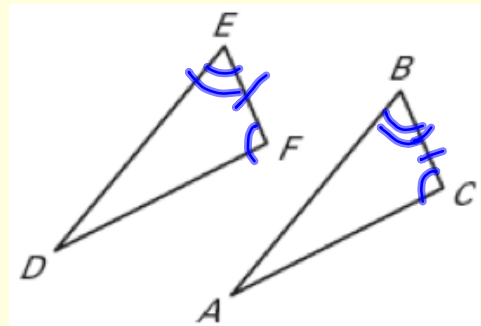
$\triangle ABC \cong \triangle DEF$

Missing Congruence for Congruent Δ 's

State the third congruence that is needed to prove $\triangle DEF \cong \triangle ABC$ using the given postulate or theorem.

Given: $\overline{DE} \cong \overline{AB}$, $\angle D \cong \angle A$, $\angle F \cong \angle C$ (AAS)

Given: $\overline{FE} \cong \overline{CB}$, $\angle F \cong \angle C$, $\angle E \cong \angle B$ (ASA)



Decide if Δ 's are \cong

Tell whether you can use the given information to decide if $\Delta JKL \cong \Delta RST$.

NOTE: Draw a diagram!!

$$\angle J \cong \angle R, \angle K \cong \angle S, \angle L \cong \angle T$$

N/a

$$\overline{JK} \cong \overline{RS}, \angle J \cong \angle R, \angle L \cong \angle T$$

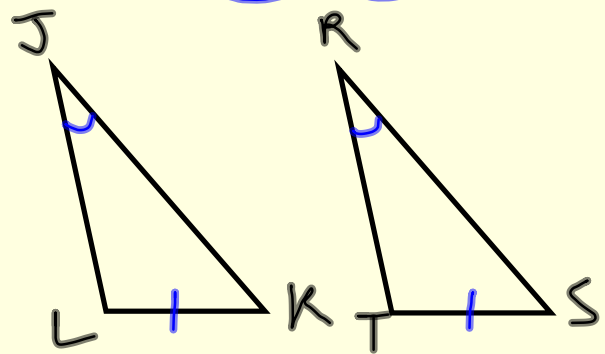
AAS Thm.

$$\angle K \cong \angle S, \angle L \cong \angle T, \overline{KL} \cong \overline{ST}$$

ASA Post.

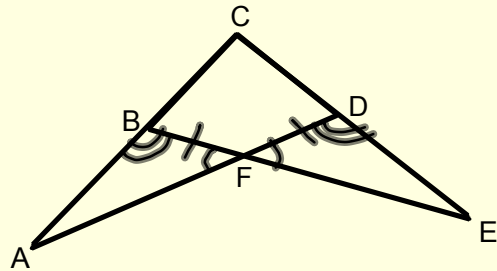
$$\angle J \cong \angle R, \overline{KL} \cong \overline{ST}$$

N/a



Use AAS or ASA in a Proof

In the diagram, $\angle CBF \cong \angle CDF$ and $\overline{BF} \cong \overline{FD}$. Write a ~~flow~~ proof to show that $\triangle ABF \cong \triangle EDF$.



Given: $\angle CBF \cong \angle CDF$
 Prove: $\overline{BF} \cong \overline{FD}$
 $\triangle ABF \cong \triangle EDF$

- | | |
|--|--|
| 1. $\angle CBF \cong \angle CDF, \overline{BF} \cong \overline{FD}$
2. $\angle BFA \cong \angle DFE$
3. $\angle CBF$ & $\angle FBA$ are supplementary
$\angle CDF$ & $\angle FDE$ are supplementary
4. $\angle ABF \cong \angle EDF$
5. $\triangle ABF \cong \triangle EDF$ | 1. Given
2. Vertical \angle \cong thm.
3. Linear Pair Post.
4. \cong Supplements thm.
5. ASA Post. |
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Homework Assignment

Worksheet 4.5B

