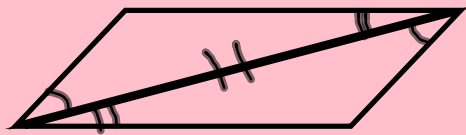


## Bellwork

### 10/24/2011

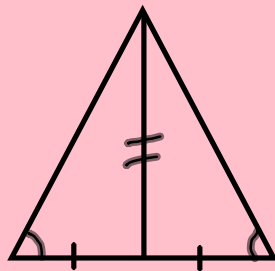
Tell whether each pair of triangles is congruent by SAS, ASA, SSS, AAS, or HL. If it is not possible to prove the triangles congruent, write *not necessarily congruent*.

1.



ASA Post

2.



N/A

**Geometry**  
**4.6 Use Congruent Triangles**  
**Standard(s): 6,8**

**Vocabulary:**

**CPCTC (Corresponding Parts of Congruent Triangles are Congruent):** If two triangles are congruent, then their corresponding angles and sides are congruent.

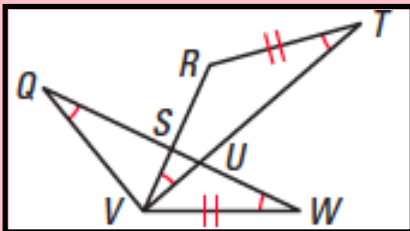
*Note: It's just one more step after proving triangles congruent! (Nothing to be scared of)*



## Use CPCTC

Tell which triangles you can show are congruent in order to prove the statement. What postulate or theorem would you use?

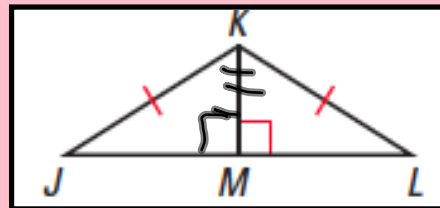
$$\underline{\overline{QW}} \cong \underline{\overline{TV}}$$



$$\triangle QVW \cong \triangle VRT$$

AAS

$$\overline{JM} \cong \overline{LM}$$

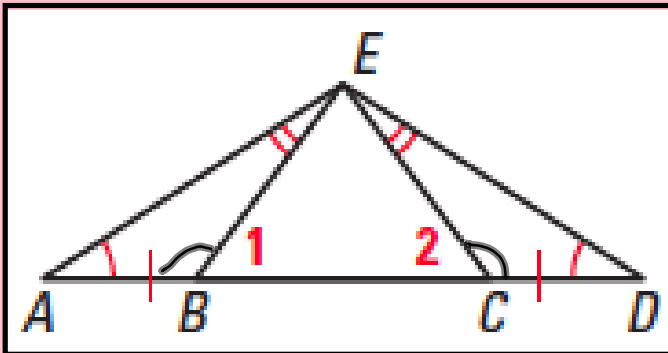


$$\triangle JKM \cong \triangle LKM$$

HL

## Write a Plan for a Proof

Use the information in the diagram to write a plan to prove  $\angle 1 \cong \angle 2$ .



$$\triangle AEB \cong \triangle DEC$$

AAS thm.

$$\angle ABE \cong \angle CDE$$

CPCTC

$$\angle 1 \cong \angle 2$$

by  
Congruent Supplements  
thm.

## Plan a Proof Involving Pairs of Triangles

Use the vertices of  $\triangle ABC$  and  $\triangle DEF$  to show that  $\angle A \cong \angle D$ . Explain.

Pull

**A(3,7), B(6,11), C(11,13), D(2, -4), E(5, -8), F(10, -10)**

$$\begin{aligned} AB &= \sqrt{(6-3)^2 + (11-7)^2} \\ &= \sqrt{9+16} \\ &= \sqrt{25} = 5 \end{aligned}$$

$$\begin{aligned} BC &= \sqrt{(11-6)^2 + (13-11)^2} \\ &= \sqrt{25+4} = \sqrt{29} \end{aligned}$$

$$\begin{aligned} CA &= \sqrt{(11-3)^2 + (13-7)^2} \\ &= \sqrt{64+36} \\ &= \sqrt{100} = 10 \end{aligned}$$

$$\begin{aligned} DE &= \sqrt{(5-2)^2 + (-8-(-4))^2} \\ &= \sqrt{9+16} \\ &= \sqrt{25} = 5 \quad \checkmark \end{aligned}$$

$$\begin{aligned} EF &= \sqrt{(10-5)^2 + (-10-(-8))^2} \\ &= \sqrt{25+4} = \sqrt{29} \quad \checkmark \end{aligned}$$

$$\begin{aligned} FD &= \sqrt{(10-2)^2 + (-10-(-4))^2} \\ &= \sqrt{64+36} \\ &= \sqrt{100} = 10 \quad \checkmark \end{aligned}$$

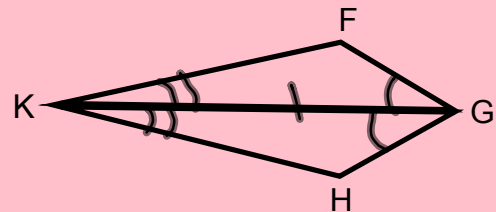
Since the triangles are congruent by SSS postulate, then  $\angle A \cong \angle D$  by CPCTC.

## Use Congruent $\Delta$ 's in Proofs

Write a two-column proof.

**Given:**  $\overline{GK}$  bisects  $\angle FGH$  and  $\angle FKH$ .

**Prove:**  $\overline{FK} \cong \overline{HK}$



1.  $\overline{GK}$  bisects  $\angle FGH$  &  $\angle FKH$
2.  $\angle FKG \cong \angle HKG$   
 $\angle FKG \cong \angle HKG$
3.  $\overline{KG} \cong \overline{KG}$
4.  $\Delta FKG \cong \Delta HKG$
5.  $\overline{FK} \cong \overline{HK}$

1. Given
2. Def. of an  $\angle$  bisector
3. Reflexive Prop.
4. ASA Post.
5. CPCTC

# Homework Assignment

## Worksheet 4.6B

