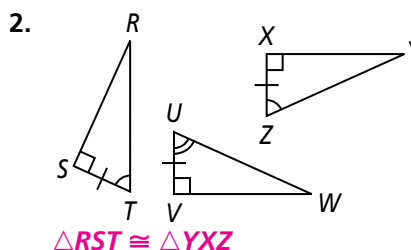
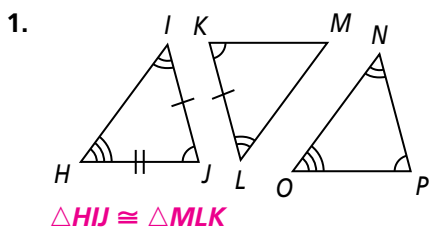


# Practice

Form G

## Triangle Congruence by ASA and AAS

Name two triangles that are congruent by ASA.



3. **Developing Proof** Complete the proof by filling in the blanks.

**Given:**  $\angle HIJ \cong \angle KIJ$

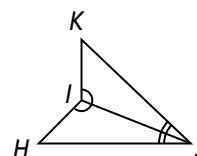
$\angle IJH \cong \angle IJK$

**Prove:**  $\triangle HIJ \cong \triangle KIJ$

**Proof:**  $\angle HIJ \cong \angle KIJ$  and  $\angle IJH \cong \angle IJK$  are given.

$\overline{IJ} \cong \overline{IJ}$  by ?. **Refl. Prop. of Congruence**

So,  $\triangle HIJ \cong \triangle KIJ$  by ?. **ASA**



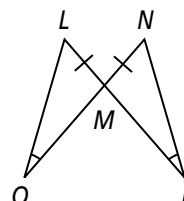
4. **Given:**  $\angle LOM \cong \angle NPM$ ,  $\overline{LM} \cong \overline{NM}$

**Prove:**  $\triangle LOM \cong \triangle NPM$

**Proof:**  $\angle LOM \cong \angle NPM$  and  $\overline{LM} \cong \overline{NM}$  are given.

$\angle LMO \cong \angle NMP$  because vert.  $\sphericalangle$ s are  $\cong$ . So,

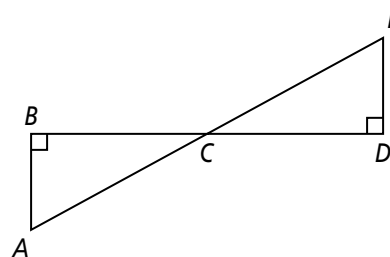
$\triangle LOM \cong \triangle NPM$  by **AAS**.



5. **Given:**  $\angle B$  and  $\angle D$  are right angles.

$\overline{AE}$  bisects  $\overline{BD}$

**Prove:**  $\triangle ABC \cong \triangle EDC$



Statements	Reasons
1) $\angle B$ and $\angle D$ are right angles.	1) Given
2) $\angle B \cong \angle D$	2) All right angles are congruent.
3) $\angle BCA \cong \angle DCE$	3) Vertical angles are congruent.
4) $\overline{AE}$ bisects $\overline{BD}$	4) Given
5) $\overline{BC} \cong \overline{CD}$	5) Def. of bisector
6) $\triangle ABC \cong \triangle EDC$	6) ASA

# Practice (continued)

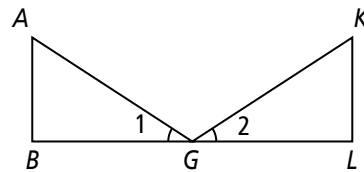
Form G

## Triangle Congruence by ASA and AAS

6. **Developing Proof** Complete the proof.

**Given:**  $\angle 1 \cong \angle 2$ ,  $\overline{AB} \perp \overline{BL}$ ,  $\overline{KL} \perp \overline{BL}$ ,  $\overline{AB} \cong \overline{KL}$

**Prove:**  $\triangle ABG \cong \triangle KLG$

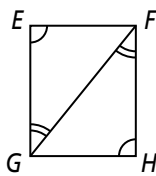


**Proof:**

$\overline{AB} \perp \overline{BL}$	→	$\angle B$ is a right $\angle$ .	→	$\angle 1 \cong \angle 2$	→	$\triangle ABG \cong \triangle KLG$
<u>a. Given</u>		c. $\perp$ lines form right $\triangle$		<u>e. Given</u>		
$\overline{KL} \perp \overline{BL}$	→	$\angle L$ is a right $\angle$ .	→	$\angle B \cong \angle L$	→	
<u>b. Given</u>		d. $\perp$ lines form right $\triangle$		<u>f.</u>		
		f. all right $\triangle$ are $\cong$		$\overline{AB} \cong \overline{KL}$	→	<u>g. Given</u>
						<u>h. AAS</u>

7. Write a flow proof.

**Given:**  $\angle E \cong \angle H$   
 $\angle HFG \cong \angle EGF$

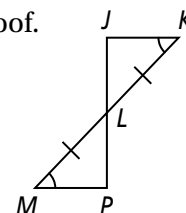


**Prove:**  $\triangle EGF \cong \triangle HFG$

$\angle E \cong \angle H$	→	$\triangle EGF \cong \triangle HFG$
Given		
$\angle HFG \cong \angle EGF$	→	
Given		AAS Theorem
$\overline{FG} \cong \overline{GF}$	→	
Reflexive Prop. of $\cong$		

8. Write a two-column proof.

**Given:**  $\angle K \cong \angle M$   
 $\overline{KL} \cong \overline{ML}$

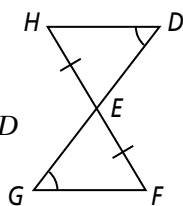


**Prove:**  $\triangle JKL \cong \triangle PML$

Statements	Reasons
$\angle K \cong \angle M$	Given
$\overline{KL} \cong \overline{ML}$	Given
$\angle JLK \cong \angle PLM$	Vert. $\triangle$ are $\cong$ .
$\triangle JKL \cong \triangle PML$	ASA Postulate

For Exercises 9 and 10, write a paragraph proof.

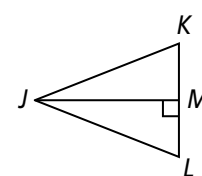
9. **Given:**  $\angle D \cong \angle G$   
 $\overline{HE} \cong \overline{FE}$



**Prove:**  $\triangle EFG \cong \triangle EHD$

$\angle D \cong \angle G$  is given.  $\angle DEH \cong \angle GEF$  because vert.  $\triangle$  are  $\cong$ .  $\overline{HE} \cong \overline{FE}$  is given. So,  $\triangle EFG \cong \triangle EHD$  by AAS.

10. **Given:**  $\overline{JM}$  bisects  $\angle J$ .  
 $\overline{JM} \perp \overline{KL}$



**Prove:**  $\triangle JMK \cong \triangle JML$

$\overline{JM}$  bisects  $\angle J$  is given.  $\angle KJM \cong \angle LJM$  by def. of an  $\angle$  bisector.  $\overline{JM} \cong \overline{JM}$  by the Refl. Prop. of  $\cong$ .  $\overline{JM} \perp \overline{KL}$  is given.  $\angle LMJ$  and  $\angle KMJ$  are right  $\triangle$  by the def. of perpendicular. Therefore,  $\angle LMJ \cong \angle KMJ$  because all right  $\triangle$  are  $\cong$ . So,  $\triangle JMK \cong \triangle JML$  by ASA.