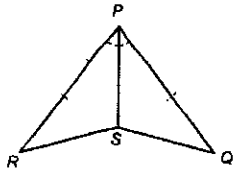


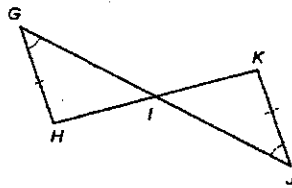
**UNIT 2 TEST REVIEW**

**Congruent Triangles:** Determine whether each pair of triangles are congruent (SSS, SAS, ASA, AAS, or HL). If not, write not congruent. If they are congruent, write a congruence statement.

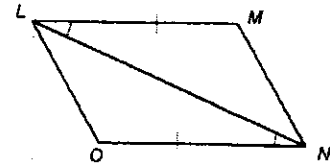
1.  $\Delta$  \_\_\_\_\_  $\cong$   $\Delta$  \_\_\_\_\_, by \_\_\_\_\_



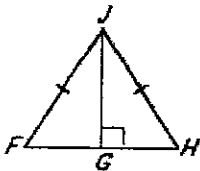
2.  $\Delta$  \_\_\_\_\_  $\cong$   $\Delta$  \_\_\_\_\_, by \_\_\_\_\_



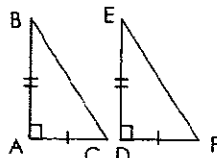
3.  $\Delta$  \_\_\_\_\_  $\cong$   $\Delta$  \_\_\_\_\_, by \_\_\_\_\_



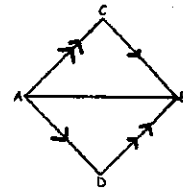
4.  $\Delta$  \_\_\_\_\_  $\cong$   $\Delta$  \_\_\_\_\_, by \_\_\_\_\_



5.  $\Delta$  \_\_\_\_\_  $\cong$   $\Delta$  \_\_\_\_\_, by \_\_\_\_\_

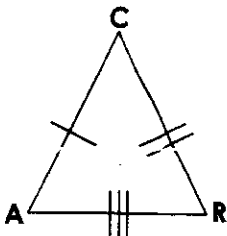


6.  $\Delta$  \_\_\_\_\_  $\cong$   $\Delta$  \_\_\_\_\_, by \_\_\_\_\_

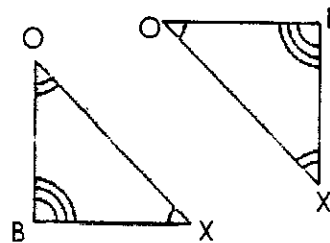
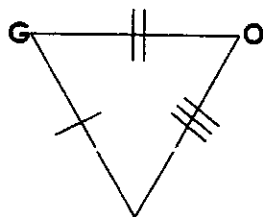


**Congruent Triangles:** Write the congruence statement for each pair of triangles.

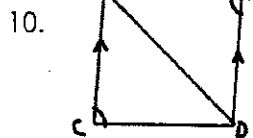
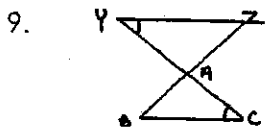
7.  $\Delta RAC \cong \Delta$  \_\_\_\_\_



8.  $\Delta FOX \cong \Delta$  \_\_\_\_\_



**Proofs:** Complete the following proofs.

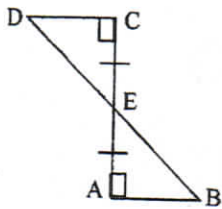


Statement	Reason
1. $\angle Y \cong \angle C$	1.
2. A is mdpt of $\overline{YC}$	2. Given
3.	3.
4.	4.
5. $\Delta YZA \cong \Delta CBA$	5.

Statement	Reason
1.	1.
2. $\overline{AC} \cong \overline{BD}$	2.
3. $\angle CAD \cong \angle BDA$	3.
4.	4.
5. $\Delta ACD \cong \Delta$ _____	5.

II. For each pair of triangles, tell: (a) Are they congruent (b) Write the triangle congruency statement. (c) Give the conjecture that makes them congruent.

1.

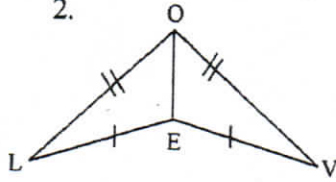


a. \_\_\_\_\_

b.  $\Delta$  \_\_\_\_\_  $\cong$   $\Delta$  \_\_\_\_\_

c. \_\_\_\_\_

2.

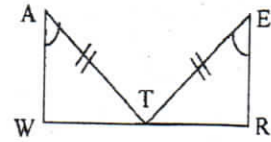


a. \_\_\_\_\_

b.  $\Delta$  \_\_\_\_\_  $\cong$   $\Delta$  \_\_\_\_\_

c. \_\_\_\_\_

3. Given: T is the midpoint of  $\overline{WR}$

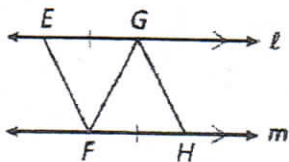


a. \_\_\_\_\_

b.  $\Delta$  \_\_\_\_\_  $\cong$   $\Delta$  \_\_\_\_\_

c. \_\_\_\_\_

4.

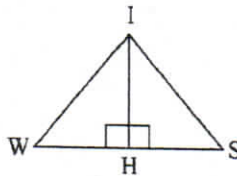


a. \_\_\_\_\_

b.  $\Delta$  \_\_\_\_\_  $\cong$   $\Delta$  \_\_\_\_\_

c. \_\_\_\_\_

5. Given:  $\overline{IH}$  Bisects  $\angle WIS$

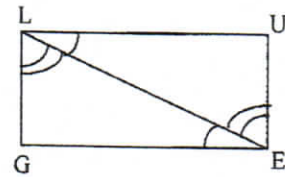


a. \_\_\_\_\_

b.  $\Delta$  \_\_\_\_\_  $\cong$   $\Delta$  \_\_\_\_\_

c. \_\_\_\_\_

6.

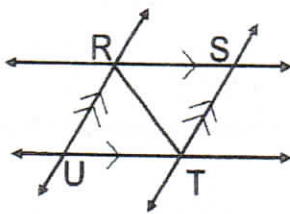


a. \_\_\_\_\_

b.  $\Delta$  \_\_\_\_\_  $\cong$   $\Delta$  \_\_\_\_\_

c. \_\_\_\_\_

7.

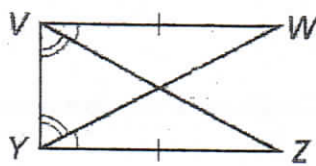


a. \_\_\_\_\_

b.  $\Delta$  \_\_\_\_\_  $\cong$   $\Delta$  \_\_\_\_\_

c. \_\_\_\_\_

8.

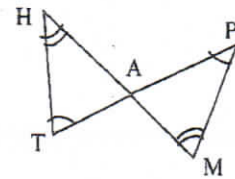


a. \_\_\_\_\_

b.  $\Delta$  \_\_\_\_\_  $\cong$   $\Delta$  \_\_\_\_\_

c. \_\_\_\_\_

9.



a. \_\_\_\_\_

b.  $\Delta$  \_\_\_\_\_  $\cong$   $\Delta$  \_\_\_\_\_

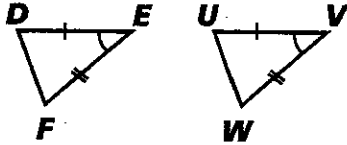
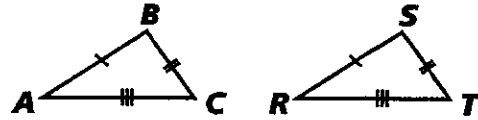
c. \_\_\_\_\_

# Congruent Triangles— SSS, SAS, ASA

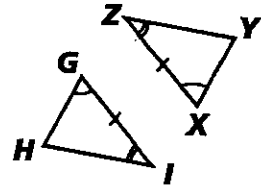
## Remember

Two figures are *congruent* if they are the same shape and size. The two figures have corresponding sides and corresponding angles that are congruent.

**Side-Side-Side (SSS) Congruence**—If three sides of one triangle are congruent to three sides of another triangle, then the triangles are congruent.

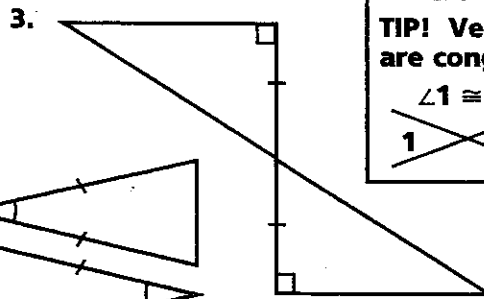
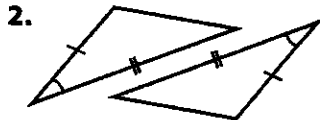
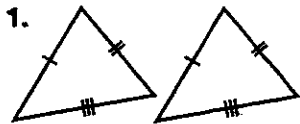


**Side-Angle-Side (SAS) Congruence**—If two sides and the included angle of one triangle are congruent to two sides and the included angle of another triangle, then the triangles are congruent.



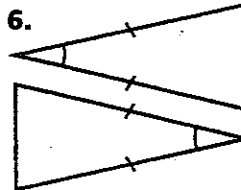
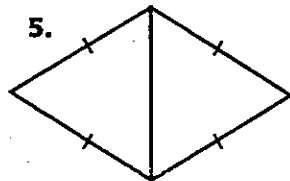
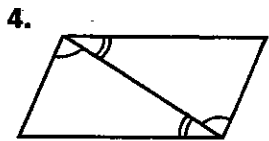
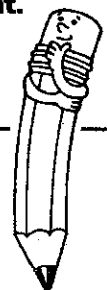
**Angle-Side-Angle (ASA) Congruence**—If two angles and the included side of one triangle are congruent to two angles and the included side of another triangle, then the triangles are congruent.

Determine which method if any can prove the triangles are congruent. Shade in the matching column letters and copy them onto the blanks to reveal a message.



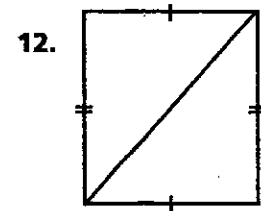
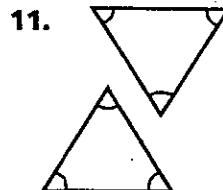
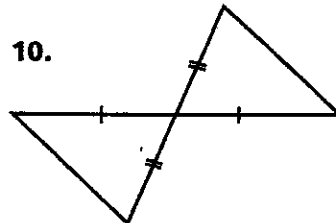
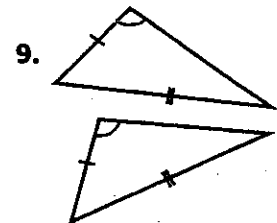
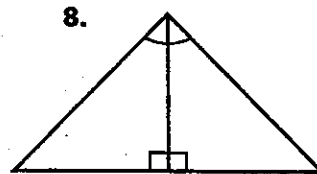
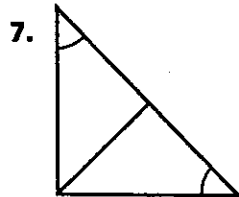
**TIP! Vertical angles are congruent.**

$\angle 1 \cong \angle 2$



**SSS SAS ASA can't**

1.	P	R	D	A
2.	B	E	L	U
3.	A	G	R	T
4.	K	E	F	I
5.	E	N	O	X
6.	Q	C	H	E
7.	I	D	V	T
8.	W	U	P	I
9.	G	O	L	A
10.	S	P	J	D
11.	K	N	O	E
12.	R	Z	A	F

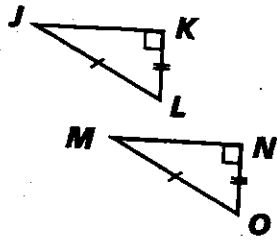


Name \_\_\_\_\_

# Congruent Triangles— AAS, HL

## Remember

**Angle-Angle-Side (AAS) Congruence**—If two angles and a non-included side of one triangle are congruent to two angles and a non-included side of another triangle, then the two triangles are congruent.

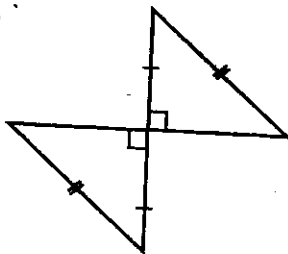


**Hypotenuse-Leg (HL) Congruence**—If the hypotenuse and a leg of one right triangle are congruent to the hypotenuse and a leg of another right triangle, then the two triangles are congruent.

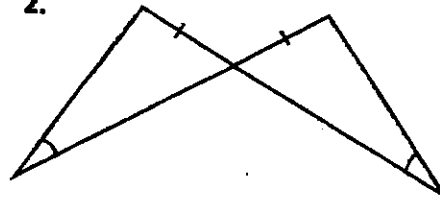
In a right triangle, the sides that form the right angle are *legs*. The side opposite the right angle is the *hypotenuse*.

Determine which methods if any can prove the triangles are congruent. There may be more than one answer. Shade in the matching column letters. Copy the letters onto the blanks to reveal the riddle answer.

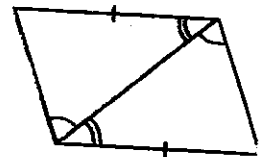
1.



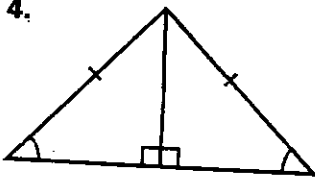
2.



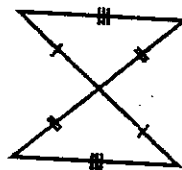
3.



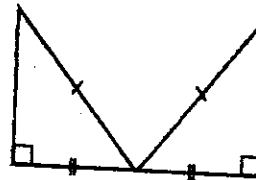
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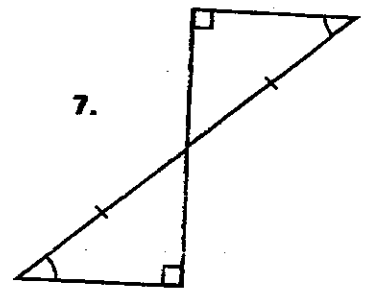
5.



6.



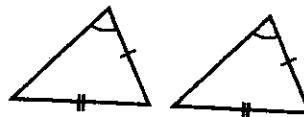
7.



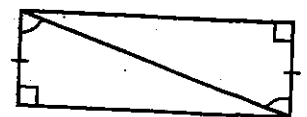
SSS SAS ASA AAS HL can't

1.	U	M	W	A	N	P
2.	B	R	I	O	L	Y
3.	A	N	E	C	Q	T
4.	M	E	P	A	N	R
5.	T	P	H	E	G	F
6.	Z	A	D	H	R	E
7.	I	M	O	V	G	U
8.	S	N	A	K	L	E
9.	W	I	T	B	E	X

8.



9.



How many geometry teachers does it take to change a light bulb?

\_\_\_\_\_. THEY \_\_\_\_\_ DO IT.

THEY CAN ONLY \_\_\_\_\_

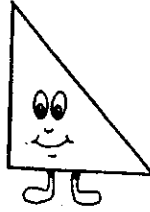
\_\_\_\_\_ CAN \_\_\_\_\_ DONE!



Name \_\_\_\_\_

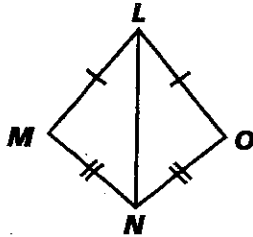
# Proving Congruence

**TIPS!** 1. By the Reflexive Property, a segment is congruent to itself.  $\overline{XY} \cong \overline{XY}$   
 2. This symbol  $\parallel$  indicates parallel lines.



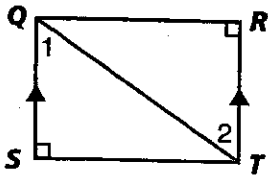
Draw straight lines to match each statement within the proof to its reason. Each set will have an extra unused reason. The uncrossed letters will spell out a word.

1.



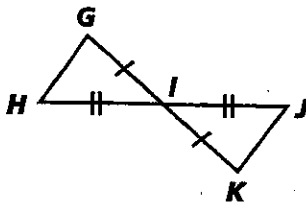
- | Statement                              |   | Reason               |
|--|---|----------------------|
| 1. $\overline{LM} \cong \overline{LO}$ | • | A • SAS Congruence   |
| 2. $\overline{MN} \cong \overline{ON}$ | • | • SSS Congruence     |
| 3. $\overline{LN} \cong \overline{LN}$ | • | G • Given            |
| 4. $\triangle LMN \cong \triangle LON$ | • | S • Given            |
|  |   | • Reflexive Property |

2.



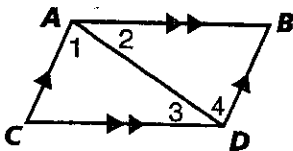
- |  |   |                               |
|--|---|-------------------------------|
| 1. $\overline{QS} \parallel \overline{RT}$ | • | W • Reflexive Property        |
| 2. $\angle R \cong \angle S$               | • | • AAS Congruence              |
| 3. $\angle 1 \cong \angle 2$               | • | R • Alternate Interior Angles |
| 4. $\overline{QT} \cong \overline{QT}$     | • | • SAS Congruence              |
| 5. $\triangle QST \cong \triangle TRQ$     | • | E • Right Angle Congruence    |
|  |   | • Given                       |

3.



- |  |   |                     |
|--|---|---------------------|
| 1. $\overline{GI} \cong \overline{KI}$ | • | S • Vertical Angles |
| 2. $\overline{HI} \cong \overline{JI}$ | • | U • SAS Congruence  |
| 3. $\angle GIH \cong \angle KIJ$       | • | • Given             |
| 4. $\triangle GIH \cong \triangle KIJ$ | • | O • Given           |
|  |   | • SSS Congruence    |

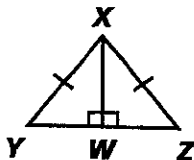
4.



- |   |   |                               |
|---|---|-------------------------------|
| 1. $\overline{AC} \parallel \overline{BD}, \overline{AB} \parallel \overline{CD}$ | • | P • Alternate Interior Angles |
| 2. $\angle 1 \cong \angle 4, \angle 2 \cong \angle 3$                             | • | M • AAS Congruence            |
| 3. $\overline{AD} \cong \overline{AD}$  | • | E • Reflexive Property        |
| 4. $\triangle ADC \cong \triangle DAB$  | • | A • Given                     |
|   |   | • ASA Congruence              |

5.

1.  $\angle XWY$  and  $\angle XWZ$  are right angles •
2.  $\triangle XWY$  and  $\triangle XWZ$  are right triangles •



- |  |   |                         |
|--|---|-------------------------|
| 3. $\overline{XY} \cong \overline{XZ}$ | • | EI • SAS Congruence     |
| 4. $\overline{XW} \cong \overline{XW}$ | • | • HL Congruence         |
| 5. $\triangle XWY \cong \triangle XWZ$ | • | R! • Reflexive Property |
|  |   | • Given                 |

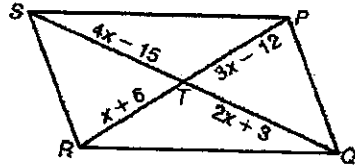
## Proving Theorems about Parallelograms

Choose the best answer.

1. The consecutive angles of a parallelogram measure  $(x + 30)^\circ$  and  $4x^\circ$ . What is the measure of the smallest angle?

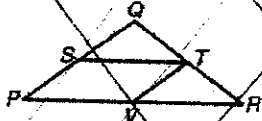
A  $10^\circ$                       C  $40^\circ$   
 B  $30^\circ$                       D  $60^\circ$

2. PQRS is a parallelogram. Find x.



F 3                              H 9  
 G 7                              J 15

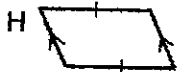
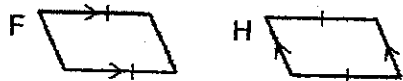
3. ~~PSTV is a parallelogram, and V is the midpoint of  $\overline{PR}$ .~~



Which is NOT necessarily true?

A  $\overline{TR} = \overline{TV}$                       C  $\overline{QP} \parallel \overline{TV}$   
 B  $\overline{QS} = \overline{SP}$                       D  $\overline{ST}$  is a midsegment.

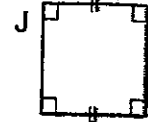
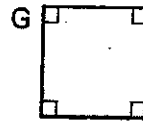
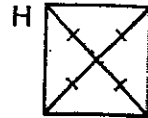
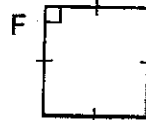
4. Which quadrilateral MUST be a parallelogram?



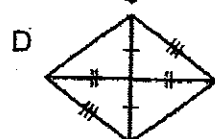
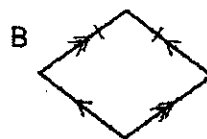
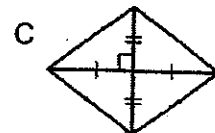
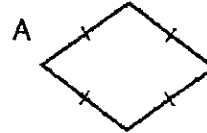
5. In quadrilateral WXYZ,  $\angle W \cong \angle Y$ . Which information would help to prove that WXYZ is a parallelogram?

A  $\overline{WY} = \overline{XZ}$                       C  $\overline{WX} = \overline{XY}$   
 B  $\angle X \cong \angle W$                       D  $\angle X \cong \angle Z$

6. Which MUST be a square?



7. Which is NOT necessarily a rhombus?



8. Quadrilateral RSTU is a parallelogram. What other information would allow you to prove that RSTU is a rectangle?

F Opposite angles are congruent.  
 G Opposite sides are congruent.  
 H The diagonals bisect the angles.  
 J The diagonals are congruent.

9. Three sides of a kite measure 8 inches, 10 inches, and 8 inches. What is the perimeter of the kite?

A 26 in.                      C 34 in.  
 B 28 in.                      D 36 in.