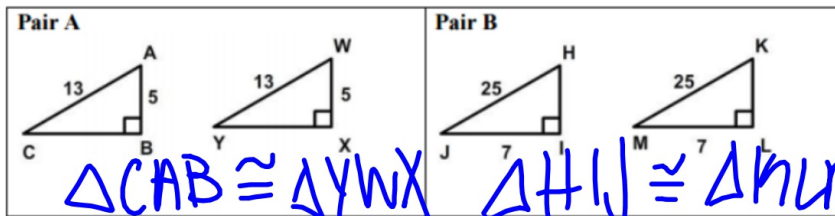


1. Which pair(s) of triangles are congruent? Why? Write a congruence statement.

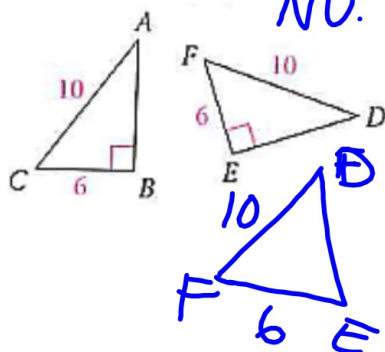


Both are \cong .

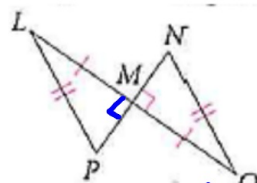
$\triangle CAB \cong \triangle YWX$ $\triangle HIJ \cong \triangle KLM$

2. Are the triangles below congruent by HL theorem? If so, write a congruence statement.

a)



b)

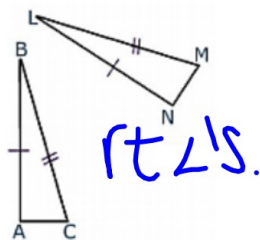


yes

$\triangle LMP \cong \triangle ONM$

What additional information would you need to prove the triangles congruent by HL theorem?

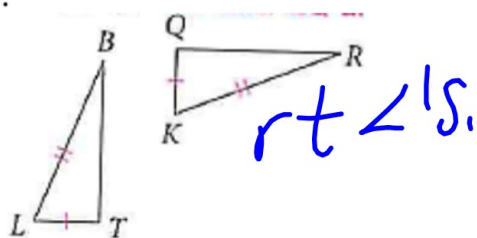
3.



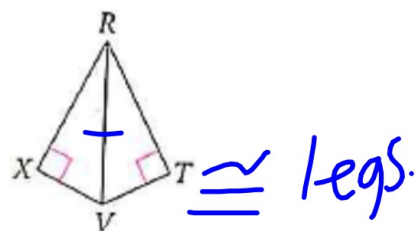
4.



5.



6.



Hwk #25 Answers:

2. Both triangles are right triangles with congruent hypotenuses & congruent pair of legs. Therefore, by the HL theorem, $\triangle LMP \cong \triangle OMN$.

3. Right angles: Angle T and Angle Q. 4. Congruent pair of legs.

6.

| Statements | Reasons |
|--|--------------------|
| $AD \cong CB$ | Given |
| $\angle D$ & $\angle B$ are right angles | Given |
| $AC \cong AC$ | Reflexive Property |
| $\triangle ADC \cong \triangle CBA$ | HL Thm. |

7. a. Given b. Given c. $\triangle JLM$ & $\triangle LJK$ are right triangles d. Given
e. $LJ \cong Lj$ f. HL Thm.

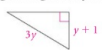
10. $x = 3; y = 2$ 11. $x = -1; y = 3$

12. We need to know if the side with length 7 is to be a leg and a hypotenuse.

13.

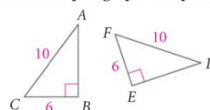
| | |
|--|--------------------------------|
| $\overline{RS} \simeq \overline{TU}$ | Given |
| $\overline{RS} \perp \overline{ST}$ | |
| $\overline{TU} \perp \overline{UV}$ | |
| T is the midpoint of \overline{RV} | |
| $\triangle RST$ and $\triangle TUV$ are both right triangles | Definition of right triangles. |
| $\overline{RT} \simeq \overline{TV}$ | Definition of midpoint |
| $\triangle RST \simeq \triangle TUV$ | HL (Hypotenuse-Leg) Theorem |

Algebra In Exercises 10 and 11, for what values of x and y are the triangles congruent by HL?

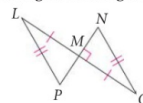


Write a short paragraph to explain why the two triangles are congruent.

1.



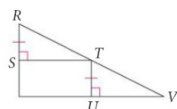
2.



12. **Critical Thinking** While working for a landscape architect, you are told to lay out a flower bed in the shape of a right triangle with sides of 3 yd and 7 yd. Explain what else you need to know in order to make the flower bed.

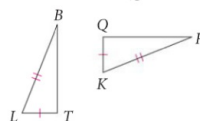
Proof 13. **Given:** $\overline{RS} \cong \overline{TU}$, $\overline{RS} \perp \overline{ST}$, $\overline{TU} \perp \overline{UV}$, T is the midpoint of \overline{RV} .

Prove: $\triangle RST \cong \triangle TUV$

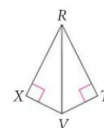


What additional information do you need to prove the triangles congruent by HL?

3. $\triangle BLT$ and $\triangle RKQ$



4. $\triangle XRV$ and $\triangle TRV$



Proof 6. **Given:** $\overline{AD} \cong \overline{CB}$, $\angle D$ and $\angle B$ are right angles.

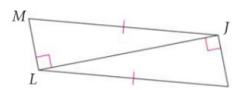
Prove: $\triangle ADC \cong \triangle CBA$



7. **Developing Proof** Complete the two-column proof.

Given: $\overline{JL} \perp \overline{LM}$, $\overline{LJ} \perp \overline{JK}$, $\overline{MJ} \cong \overline{KL}$

Prove: $\triangle JLM \cong \triangle LJK$

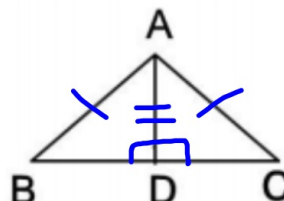


| Statements | Reasons |
|--|-------------------------------------|
| 1. $\overline{JL} \perp \overline{LM}$ and $\overline{LJ} \perp \overline{JK}$ | a. ? |
| 2. $\angle JLM$ and $\angle LJK$ are right angles. | b. ? |
| 3. $\angle JLM \cong \angle LJK$ | 3. Definition of a right angle |
| 4. $\overline{MJ} \cong \overline{KL}$ | d. ? |
| 5. $\angle JLM \cong \angle LJK$ | 5. Reflexive Property of Congruence |
| 6. $\triangle JLM \cong \triangle LJK$ | f. ? |

1. Complete the proof below.

Given: $\overline{AD} \perp \overline{BC}$ and $\overline{BA} \cong \overline{CA}$

Prove: $\triangle ABD \cong \triangle ACD$



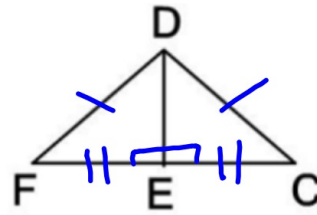
| Statements | Justifications |
|--|--------------------------------|
| $\overline{AD} \perp \overline{BC}$ | Given |
| $\angle ADB \text{ \& } \angle ADC = 90^\circ$ | Def of \perp bisector. |
| $\angle ADB \cong \angle ADC$ | All right angles are congruent |
| $\overline{BA} \cong \overline{CA}$ | Given |
| $\overline{AD} \cong \overline{AD}$ | Reflexive Property |
| $\triangle ABD \cong \triangle ACD$ | HL Thm. |

2. Complete the proof below.

Given: \overline{DE} is the perpendicular bisector of \overline{FC} ;

$\overline{DF} \cong \overline{DC}$

Prove: $\triangle DEF \cong \triangle DEC$



| Statements | Justifications |
|--|-------------------------------|
| \overline{DE} is the perpendicular bisector of \overline{FC} | Given |
| $\overline{FE} \cong \overline{CE}$ | Definition of bisector |
| $\angle DEF \cong \angle DEC = 90^\circ$ | Definition of perpendicular ✓ |
| $\overline{DF} \cong \overline{DC}$ | All right angles are equal ✓ |
| | Given |
| $\triangle DEF \cong \triangle DEC$ | HL Thm. |

Classwork: Practice 4.6 Worksheet

IXL #14 - K.5 & K.11 due tomorrow at 4pm!