

GUIDED PRACTICE

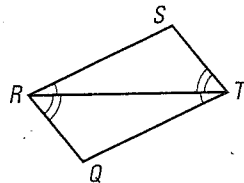
Vocabulary Check ✓

1. Name the four methods you have learned for proving triangles congruent. Only one of these is called a *theorem*. Why is it called a theorem?

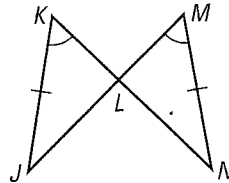
Concept Check ✓

Is it possible to prove that the triangles are congruent? If so, state the postulate or theorem you would use. Explain your reasoning.

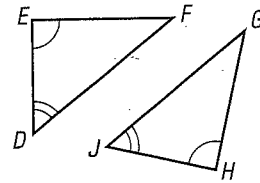
2. $\triangle RST$ and $\triangle TQR$



3. $\triangle JKL$ and $\triangle NML$



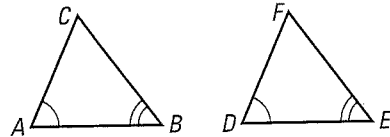
4. $\triangle DFE$ and $\triangle JGH$



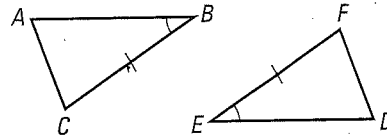
Skill Check ✓

State the third congruence that must be given to prove that $\triangle ABC \cong \triangle DEF$ using the indicated postulate or theorem.

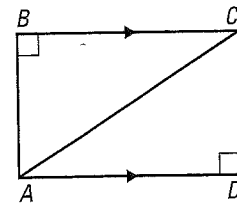
5. ASA Congruence Postulate



6. AAS Congruence Theorem



7. **RELAY RACE** A course for a relay race is marked on the gymnasium floor. Your team starts at A, goes to B, then C, then returns to A. The other team starts at C, goes to D, then A, then returns to C. Given that $\overline{AD} \parallel \overline{BC}$ and $\angle B$ and $\angle D$ are right angles, explain how you know the two courses are the same length.

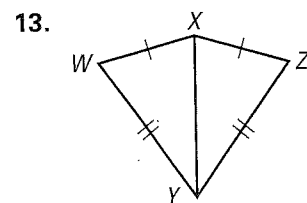
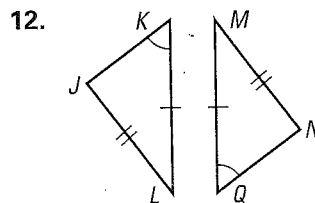
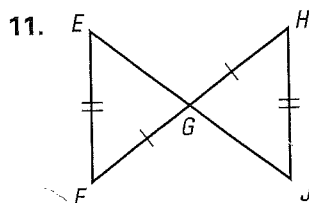
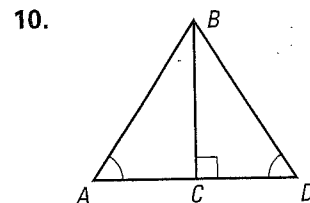
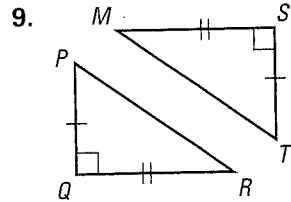
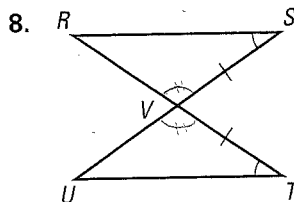


PRACTICE AND APPLICATIONS

STUDENT HELP

Extra Practice to help you master skills is on pp. 809 and 810.

LOGICAL REASONING Is it possible to prove that the triangles are congruent? If so, state the postulate or theorem you would use. Explain your reasoning.



STUDENT HELP

HOMEWORK HELP

Example 1: Exs. 8–13
Example 2: Exs. 14–22
Example 3: Exs. 23–25, 28

DEVELOPING PROOF State the third congruence that must be given to prove that $\triangle PQR \cong \triangle STU$ using the indicated postulate or theorem. (Hint: First sketch $\triangle PQR$ and $\triangle STU$. Mark the triangles with the given information.)

14. **GIVEN** $\angle Q \cong \angle T, \overline{PQ} \cong \overline{ST}$
Use the AAS Congruence Theorem.

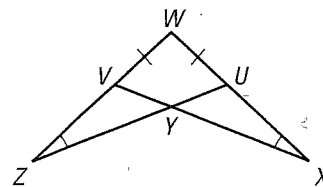
15. **GIVEN** $\angle R \cong \angle U, \overline{PR} \cong \overline{SU}$
Use the ASA Congruence Postulate.

16. **GIVEN** $\angle R \cong \angle U, \angle P \cong \angle S$
Use the ASA Congruence Postulate.

17. **GIVEN** $\overline{PR} \cong \overline{SU}, \angle R \cong \angle U$
Use the SAS Congruence Postulate.

18. **DEVELOPING PROOF** Complete the proof that $\triangle XWV \cong \triangle ZWU$.

GIVEN $\overline{VW} \cong \overline{UW}$
 $\angle X \cong \angle Z$
PROVE $\triangle XWV \cong \triangle ZWU$



STUDENT HELP

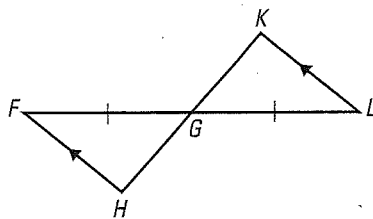
Study Tip

When a proof involves overlapping triangles, such as the ones in Exs. 18 and 22, you may find it helpful to sketch the triangles separately.

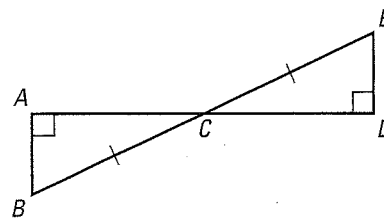
Statements	Reasons
1. $\overline{VW} \cong \overline{UW}$	1. ?
2. $\angle X \cong \angle Z$	2. ?
3. ?	3. Reflexive Property of Congruence
4. $\triangle XWV \cong \triangle ZWU$	4. ?

PROOF Write a two-column proof or a paragraph proof.

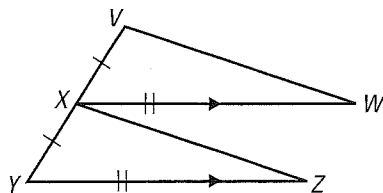
19. **GIVEN** $\overline{FH} \parallel \overline{LK},$
 $\overline{GF} \cong \overline{GL}$
PROVE $\triangle FGH \cong \triangle LGK$



20. **GIVEN** $\overline{AB} \perp \overline{AD}, \overline{DE} \perp \overline{AD},$
 $\overline{BC} \cong \overline{EC}$
PROVE $\triangle ABC \cong \triangle DEC$



21. **GIVEN** $\overline{VX} \cong \overline{XY}, \overline{XW} \cong \overline{YZ},$
 $\overline{XW} \parallel \overline{YZ}$
PROVE $\triangle VXW \cong \triangle XYZ$



22. **GIVEN** $\angle TQS \cong \angle RSQ,$
 $\angle R \cong \angle T$
PROVE $\triangle TQS \cong \triangle RSQ$

