

GUIDED PRACTICE

Vocabulary Check ✓

1. Sketch a triangle and label its vertices. Name two sides and the included angle between the sides.

Concept Check ✓

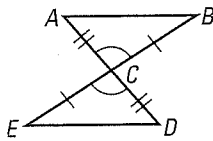
2. **ERROR ANALYSIS** Henry believes he can use the information given in the diagram and the SAS Congruence Postulate to prove the two triangles are congruent. Explain Henry's mistake.



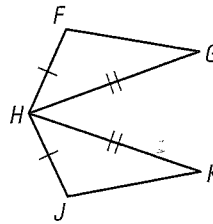
Skill Check ✓

LOGICAL REASONING Decide whether enough information is given to prove that the triangles are congruent. If there is enough information, tell which congruence postulate you would use.

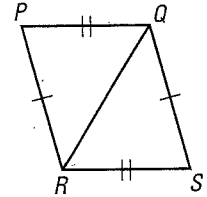
3. $\triangle ABC, \triangle DEC$



4. $\triangle FGH, \triangle JKH$



5. $\triangle PQR, \triangle SRQ$



PRACTICE AND APPLICATIONS

STUDENT HELP

Extra Practice to help you master skills is on p. 809.

NAMING SIDES AND INCLUDED ANGLES Use the diagram. Name the included angle between the pair of sides given.

6. \overline{JK} and \overline{KL}

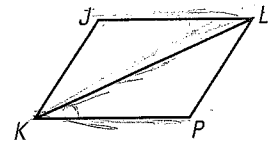
7. \overline{PK} and \overline{LK}

8. \overline{LP} and \overline{LK}

9. \overline{JL} and \overline{JK}

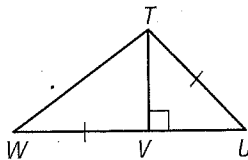
10. \overline{KL} and \overline{JL}

11. \overline{KP} and \overline{PL}

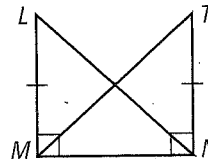


LOGICAL REASONING Decide whether enough information is given to prove that the triangles are congruent. If there is enough information, state the congruence postulate you would use.

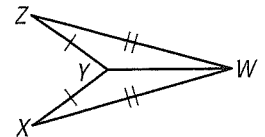
12. $\triangle UVT, \triangle WVT$



13. $\triangle LMN, \triangle TNM$



14. $\triangle YZW, \triangle YXW$



STUDENT HELP

HOMEWORK HELP

Example 1: Exs. 18, 20–28

Example 2: Exs. 19–28

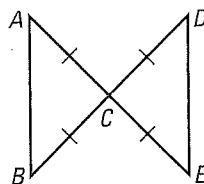
Example 3: Exs. 12–17

Example 4: Exs. 20–28

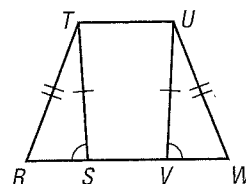
Example 5: Exs. 30, 31

Example 6: Exs. 33–35

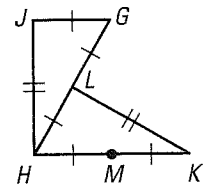
15. $\triangle ACB, \triangle ECD$



16. $\triangle RST, \triangle WVU$

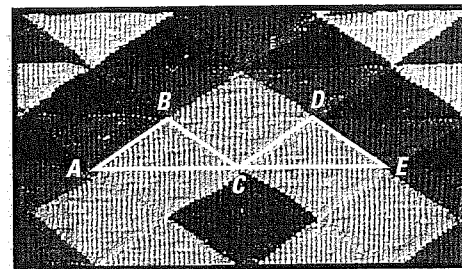


17. $\triangle GJH, \triangle HLK$



DEVELOPING PROOF In Exercises 18 and 19, use the photo of the Navajo rug. Assume that $\overline{BC} \cong \overline{DE}$ and $\overline{AC} \cong \overline{CE}$.

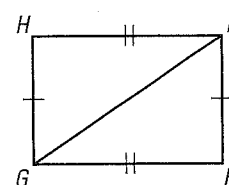
18. What other piece of information is needed to prove that $\triangle ABC \cong \triangle CDE$ using the SSS Congruence Postulate?
19. What other piece of information is needed to prove that $\triangle ABC \cong \triangle CDE$ using the SAS Congruence Postulate?



DEVELOPING PROOF Complete the proof by supplying the reasons.

GIVEN $\overline{EF} \cong \overline{GH}$,
 $\overline{FG} \cong \overline{HE}$

PROVE $\triangle EFG \cong \triangle GHE$

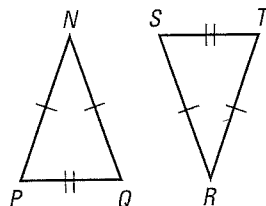


Statements	Reasons
1. $\overline{EF} \cong \overline{GH}$	1. ?
2. $\overline{FG} \cong \overline{HE}$	2. ?
3. $\overline{GE} \cong \overline{GE}$	3. ?
4. $\triangle EFG \cong \triangle GHE$	4. ?

TWO-COLUMN PROOF Write a two-column proof.

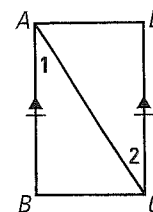
21. **GIVEN** $\overline{NP} \cong \overline{QN} \cong \overline{RS} \cong \overline{TR}$,
 $\overline{PQ} \cong \overline{ST}$

PROVE $\triangle NPQ \cong \triangle RST$



22. **GIVEN** $\overline{AB} \cong \overline{CD}$, $\overline{AB} \parallel \overline{CD}$

PROVE $\triangle ABC \cong \triangle CDA$



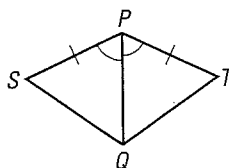
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PARAGRAPH PROOF Write a paragraph proof.

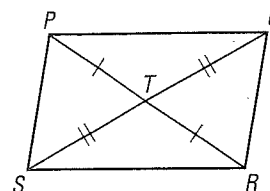
23. **GIVEN** \overline{PQ} bisects $\angle SPT$,
 $\overline{SP} \cong \overline{TP}$

PROVE $\triangle SPQ \cong \triangle TPQ$



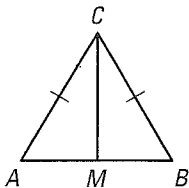
24. **GIVEN** $\overline{PT} \cong \overline{RT}$, $\overline{QT} \cong \overline{ST}$

PROVE $\triangle PQT \cong \triangle RST$

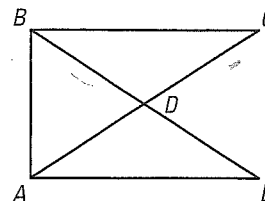


PROOF Write a two-column proof or a paragraph proof.

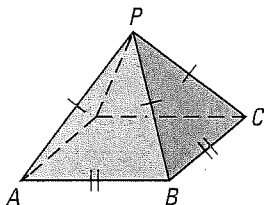
25. **GIVEN** $\overline{AC} \cong \overline{BC}$,
 M is the midpoint of \overline{AB} .
PROVE $\triangle ACM \cong \triangle BCM$



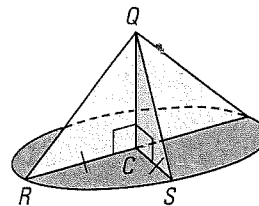
26. **GIVEN** $\overline{BC} \cong \overline{AE}$, $\overline{BD} \cong \overline{AD}$,
 $\overline{DE} \cong \overline{DC}$
PROVE $\triangle ABC \cong \triangle BAE$



27. **GIVEN** $\overline{PA} \cong \overline{PB} \cong \overline{PC}$,
 $\overline{AB} \cong \overline{BC}$
PROVE $\triangle PAB \cong \triangle PBC$



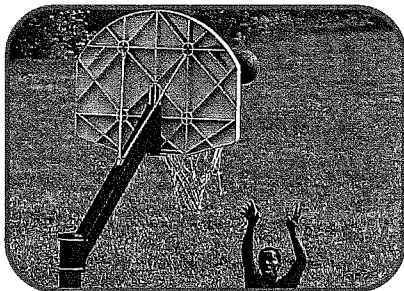
28. **GIVEN** $\overline{CR} \cong \overline{CS}$, $\overline{QC} \perp \overline{CR}$,
 $\overline{QC} \perp \overline{CS}$
PROVE $\triangle QCR \cong \triangle QCS$



29. **TECHNOLOGY** Use geometry software to draw a triangle. Draw a line and reflect the triangle across the line. Measure the sides and the angles of the new triangle and tell whether it is congruent to the original one.

Writing Explain how triangles are used in the object shown to make it more stable.

30.



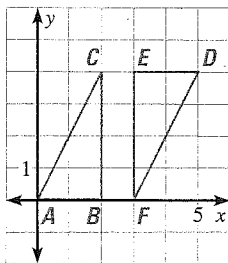
31.



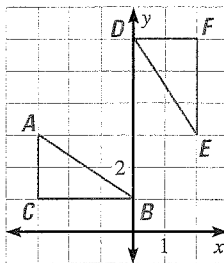
32. **CONSTRUCTION** Draw an isosceles triangle with vertices A , B , and C . Use a compass and straightedge to construct $\triangle DEF$ so that $\triangle DEF \cong \triangle ABC$.

USING ALGEBRA Use the Distance Formula and the SSS Congruence Postulate to show that $\triangle ABC \cong \triangle DEF$.

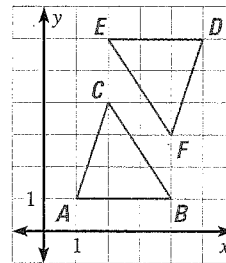
33.



34.



35.



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