

GUIDED PRACTICE

Vocabulary Check ✓

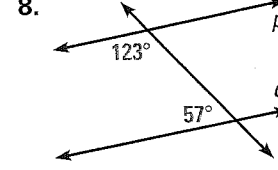
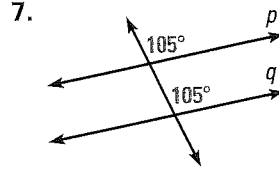
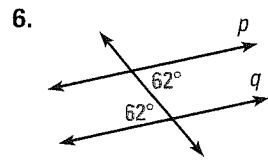
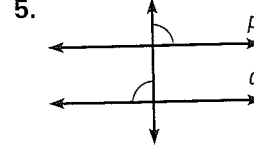
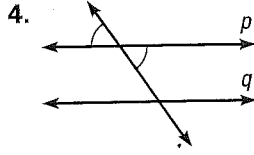
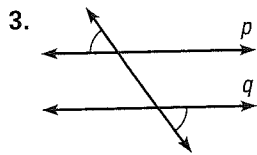
Concept Check ✓

Skill Check ✓

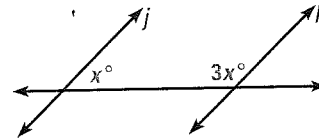
1. What are *parallel lines*?

2. Write the converse of Theorem 3.8. Is the converse true?

Can you prove that lines p and q are parallel? If so, describe how.



9. Find the value of x that makes $j \parallel k$. Which postulate or theorem about parallel lines supports your answer?

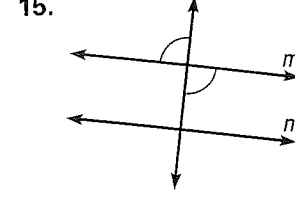
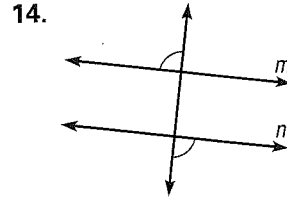
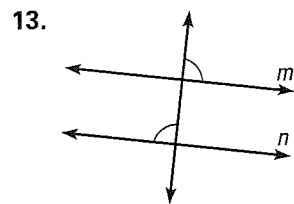
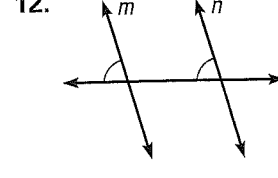
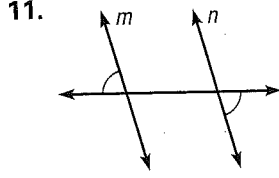
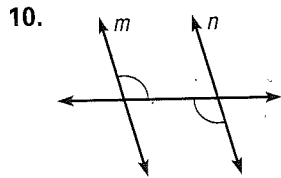


PRACTICE AND APPLICATIONS

STUDENT HELP

Extra Practice to help you master skills is on p. 808.

LOGICAL REASONING Is it possible to prove that lines m and n are parallel? If so, state the postulate or theorem you would use.

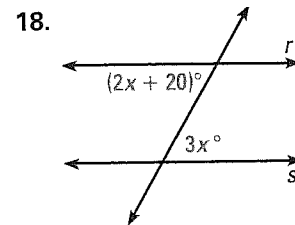
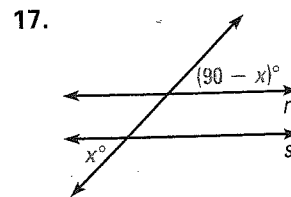
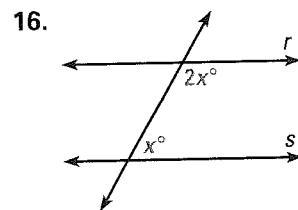


STUDENT HELP

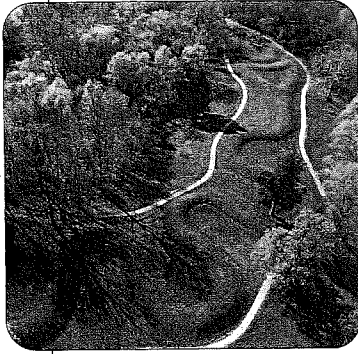
HOMEWORK HELP

- Example 1: Exs. 28, 30
- Example 2: Exs. 28, 30
- Example 3: Exs. 10–18
- Example 4: Exs. 19, 29, 31
- Example 5: Exs. 20–27

USING ALGEBRA Find the value of x that makes $r \parallel s$.



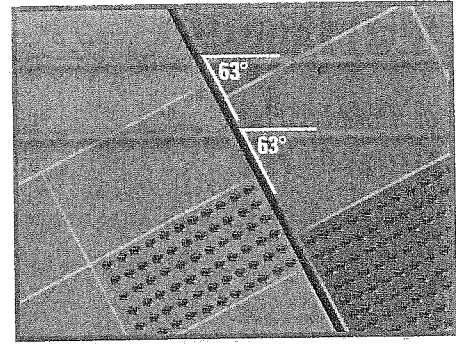
FOCUS ON APPLICATIONS



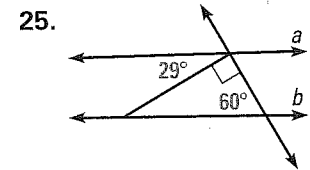
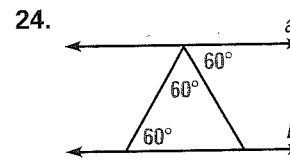
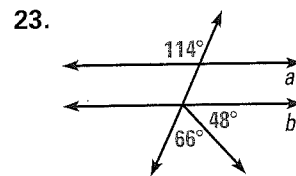
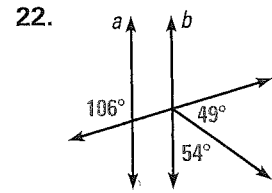
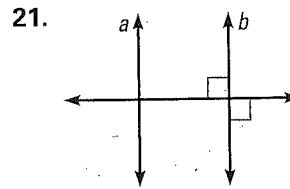
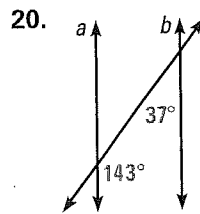
REAL LIFE **THE GREAT SERPENT MOUND**, an archaeological mound near Hillsboro, Ohio, is 2 to 5 feet high, and is nearly 20 feet wide. It is over $\frac{1}{4}$ mile long.

APPLICATION LINK
www.mcdougallittell.com

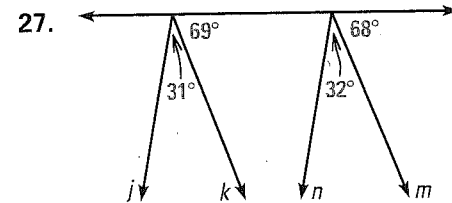
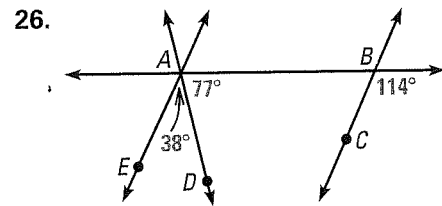
19. **ARCHAEOLOGY** A farm lane in Ohio crosses two long, straight earthen mounds that may have been built about 2000 years ago. The mounds are about 200 feet apart, and both form a 63° angle with the lane, as shown. Are the mounds parallel? How do you know?



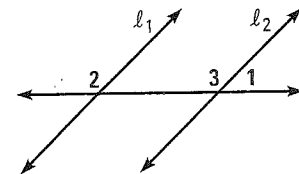
- LOGICAL REASONING** Is it possible to prove that lines a and b are parallel? If so, explain how.



- LOGICAL REASONING** Which lines, if any, are parallel? Explain.

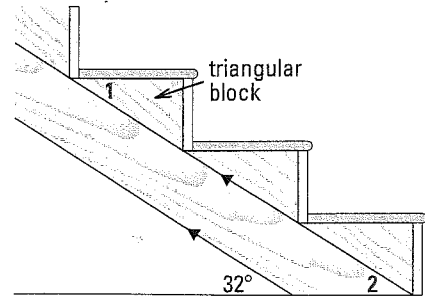


28. **PROOF** Complete the proof.
GIVEN $\angle 1$ and $\angle 2$ are supplementary.
PROVE $l_1 \parallel l_2$



Statements	Reasons
1. $\angle 1$ and $\angle 2$ are supplementary.	1. _____?
2. $\angle 1$ and $\angle 3$ are a linear pair.	2. Definition of linear pair
3. _____?	3. Linear Pair Postulate
4. _____?	4. Congruent Supplements Theorem
5. $l_1 \parallel l_2$	5. _____?

29. **BUILDING STAIRS** One way to build stairs is to attach triangular blocks to an angled support, as shown at the right. If the support makes a 32° angle with the floor, what must $m\angle 1$ be so the step will be parallel to the floor? The sides of the angled support are parallel.

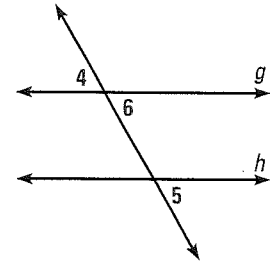


30. **PROVING THEOREM 3.10** Write a two-column proof for the Alternate Exterior Angles Converse: If two lines are cut by a transversal so that alternate exterior angles are congruent, then the lines are parallel.

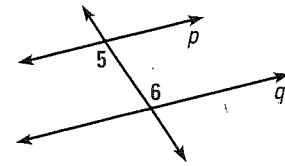
GIVEN $\angle 4 \cong \angle 5$

PROVE $g \parallel h$

Plan for Proof Show that $\angle 4$ is congruent to $\angle 6$, show that $\angle 6$ is congruent to $\angle 5$, and then use the Corresponding Angles Converse.

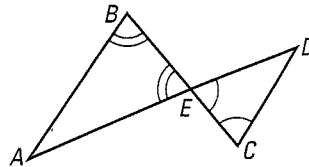


31. **Writing** In the diagram at the right, $m\angle 5 = 110^\circ$ and $m\angle 6 = 110^\circ$. Explain why $p \parallel q$.

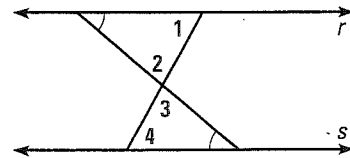


- LOGICAL REASONING** Use the information given in the diagram.

32. What can you prove about \overline{AB} and \overline{CD} ? Explain.



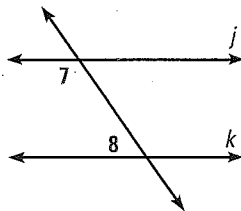
33. What can you prove about $\angle 1$, $\angle 2$, $\angle 3$, and $\angle 4$? Explain.



- PROOF** Write a proof.

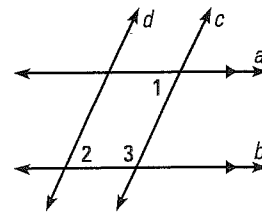
34. **GIVEN** $m\angle 7 = 125^\circ$, $m\angle 8 = 55^\circ$

PROVE $j \parallel k$



35. **GIVEN** $a \parallel b$, $\angle 1 \cong \angle 2$

PROVE $c \parallel d$



36. **TECHNOLOGY** Use geometry software to construct a line l , a point P not on l , and a line n through P parallel to l . Construct a point Q on l and construct \overrightarrow{PQ} . Choose a pair of alternate interior angles and construct their angle bisectors. Are the bisectors parallel? Make a conjecture. Write a plan for a proof of your conjecture.

STUDENT HELP

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several software
applications.