GUIDED PRACTICE

Vocabulary Check ✓

Concept Check ✓

Skill Check ✓

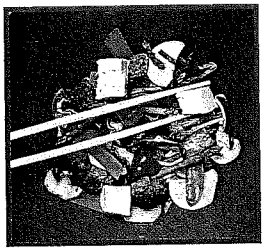
1. Draw two lines and a transversal. Identify a pair of alternate interior angles.

2. How are skew lines and parallel lines alike? How are they different?

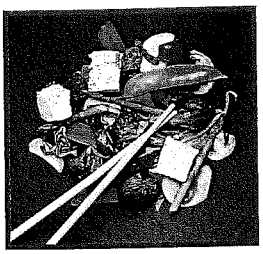
Match the photo with the corresponding description of the chopsticks.

A. skew **B.** parallel **C.** intersecting

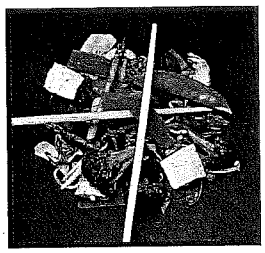
3.



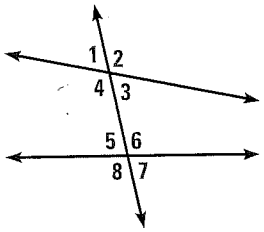
4.



5.



In Exercises 6–9, use the diagram at the right.



6. Name a pair of corresponding angles.

7. Name a pair of alternate interior angles.

8. Name a pair of alternate exterior angles.

9. Name a pair of consecutive interior angles.

PRACTICE AND APPLICATIONS

STUDENT HELP

Extra Practice
to help you master skills is on p. 807.

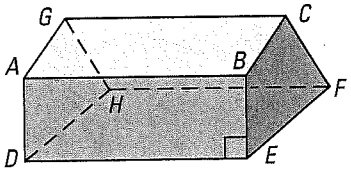
LINE RELATIONSHIPS **Think of each segment in the diagram as part of a line. Fill in the blank with *parallel*, *skew*, or *perpendicular*.**

10. $\overleftrightarrow{DE}$, $\overleftrightarrow{AB}$, and $\overleftrightarrow{GC}$ are ___?___.

11. $\overleftrightarrow{DE}$ and $\overleftrightarrow{BE}$ are ___?___.

12. $\overleftrightarrow{BE}$ and $\overleftrightarrow{GC}$ are ___?___.

13. Plane GAD and plane CBE are ___?___.



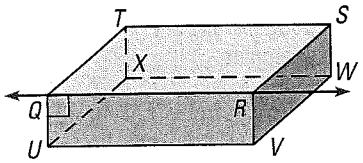
IDENTIFYING RELATIONSHIPS **Think of each segment in the diagram as part of a line. There may be more than one right answer.**

14. Name a line parallel to $\overleftrightarrow{QR}$.

15. Name a line perpendicular to $\overleftrightarrow{QR}$.

16. Name a line skew to $\overleftrightarrow{QR}$.

17. Name a plane parallel to plane QRS.



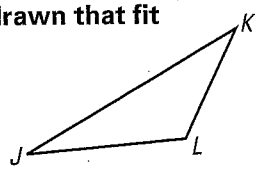
STUDENT HELP

HOMEWORK HELP
Example 1: Exs. 10–20, 27–36
Example 2: Exs. 21–26

APPLYING POSTULATES **How many lines can be drawn that fit the description?**

18. through L parallel to $\overleftrightarrow{JK}$

19. through L perpendicular to $\overleftrightarrow{JK}$



FOCUS ON PEOPLE

PHILIPPE PETIT walked more than 2000 feet up an inclined cable to the Eiffel Tower. The photo above is from a performance in New York City.

20. **TIGHTROPE WALKING** Philippe Petit sometimes uses a long pole to help him balance on the tightrope. Are the rope and the pole at the left *intersecting*, *perpendicular*, *parallel*, or *skew*?

ANGLE RELATIONSHIPS **Complete the statement with *corresponding, alternate interior, alternate exterior,* or *consecutive interior.***

21. $\angle 8$ and $\angle 12$ are ___?___ angles.

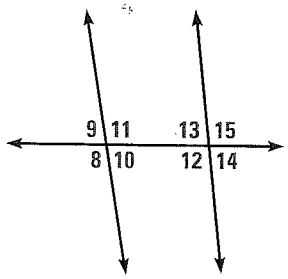
22. $\angle 9$ and $\angle 14$ are ___?___ angles.

23. $\angle 10$ and $\angle 12$ are ___?___ angles.

24. $\angle 11$ and $\angle 12$ are ___?___ angles.

25. $\angle 8$ and $\angle 15$ are ___?___ angles.

26. $\angle 10$ and $\angle 14$ are ___?___ angles.



ROMAN NUMERALS **Write the Roman numeral that consists of the indicated segments. Then write the base ten value of the Roman numeral. For example, the base ten value of XII is 10 + 1 + 1 = 12.**

Roman numeral	I	V	X	L	M
Base ten value	1	5	10	50	1000

27. Three parallel segments

28. Two non-congruent perpendicular segments

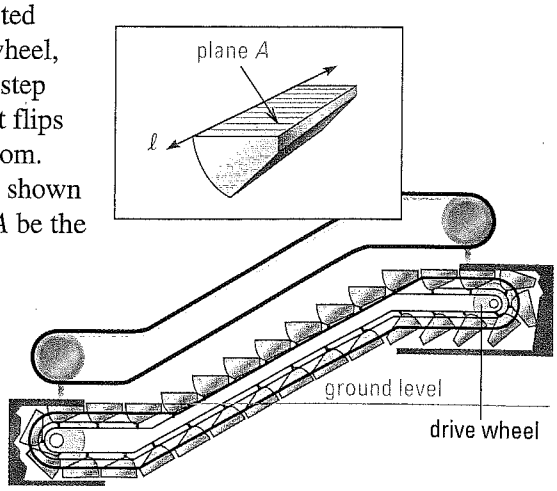
29. Two congruent segments that intersect to form only one angle

30. Two intersecting segments that form vertical angles

31. Four segments, two of which are parallel

ESCALATORS **In Exercises 32–36, use the following information.**

The steps of an escalator are connected to a chain that runs around a drive wheel, which moves continuously. When a step on an up-escalator reaches the top, it flips over and goes back down to the bottom. Each step is shaped like a wedge, as shown at the right. On each step, let plane A be the plane you stand on.



32. As each step moves around the escalator, is plane A always parallel to ground level?

33. When a person is standing on plane A, is it parallel to ground level?

34. Is line ℓ on any step always parallel to ℓ on any other step?

35. Is plane A on any step always parallel to plane A on any other step?

36. As each step moves around the escalator, how many positions are there at which plane A is perpendicular to ground level?