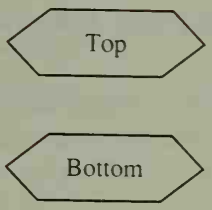
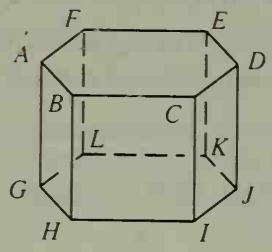
22. Draw a diagram of a six-sided box by following the steps below.



Step 1

Draw a six-sided top. Then draw an exact copy of the top directly below it.



Step 2

Draw vertical edges. Make invisible edges dashed.

Exercises 23–29 refer to the diagram in Step 2 of Exercise 22.

23. Name five lines that appear to be parallel to $\overline{AG}$.

24. Name three lines that appear to be parallel to $\overline{AB}$.

25. Name four lines that appear to be skew to $\overline{AB}$.

26. Name two planes parallel to $\overleftrightarrow{AF}$.

27. Name four planes parallel to $\overleftrightarrow{FL}$.

28. How many pairs of parallel planes are shown?

29. Suppose the top and bottom of the box lie in parallel planes. Explain how Theorem 3-1 can be used to prove $\overline{CD} \parallel \overline{IJ}$.

Complete each statement with the word *always*, *sometimes*, or *never*.

30. When there is a transversal of two lines, the three lines are ___?___ coplanar.

31. Three lines intersecting in one point are ___?___ coplanar.

32. Two lines that are not coplanar ___?___ intersect.

33. Two lines parallel to a third line are ___?___ parallel to each other.

34. Two lines skew to a third line are ___?___ skew to each other.

35. Two lines perpendicular to a third line are ___?___ perpendicular to each other.

36. Two planes parallel to the same line are ___?___ parallel to each other.

37. Two planes parallel to the same plane are ___?___ parallel to each other.

38. Lines in two parallel planes are ___?___ parallel to each other.

39. Two lines parallel to the same plane are ___?___ parallel to each other.

Draw each figure described.

C **40.** Lines a and b are skew, lines b and c are skew, and $a \parallel c$.

41. Lines d and e are skew, lines e and f are skew, and $d \perp f$.

42. Line $l \parallel$ plane X, plane $X \parallel$ plane Y, and l is not parallel to Y.