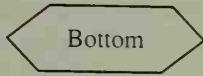
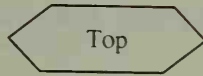
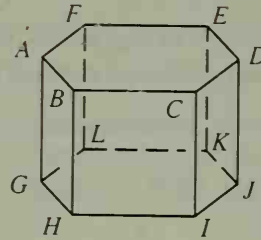


22. Draw a diagram of a six-sided box by following the steps below.



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 .