■ FIGURE 5.32 ■ The Three Regular Views.

At this stage we can consider spacing between views as purely a matter of appearance. The views should be spaced well apart, yet close enough to appear related to each other. The space between the front and top views may or may not be equal to the space between the front and side views. If dimensions (Chapter 11) are to be added to the sketch, adequate space for them will have to be left between views.

An important advantage of a view over a photograph of an object is that hidden features can be clearly shown by means of hidden lines. In Fig. 5.32d, surface 7–8–9–10 in the front view appears as a visible line 5–6 in the top view and as a hidden line 15–16 in the side view. Also, hole A, which appears as a circle in the front view, shows as hidden lines 1–4 and 2–3 in the top view, and 11–12 and 13–14 in the side view. For a complete discussion of hidden lines, see §5.24. Also note the use of center lines for the hole (see §5.25).

5.19 ■ THE SIX VIEWS

Any object can be viewed from six mutually perpendicular directions, as shown in Fig. 5.33a. These six views may be drawn if necessary, as shown in Fig. 5.33b. Except as explained in §6.8, the six views are always arranged as shown, which is the American National Standard arrangement. The *top*, *front*, and *bottom views* align vertically, while the *rear*, *left-side*, *front*, and *right-side views* align horizontally. To draw a view out of place is a serious error and is generally regarded as one of the worst possible mistakes in drawing.

Note that height is shown in the rear, left-side, front, and right-side views; width is shown in the rear, top, front, and bottom views; and depth is shown in the four views that surround the front view—namely, the left-side, top, right-side, and bottom views. Each view shows two of the principal dimensions. Note also that in the