parabolic segments. In addition, the shape of the constant-height contours is not preserved in going from top to bottom. Even though it may not be immediately obvious, the volume of this function is just equal to $|bd|$, a result easily obtained from Eq. (2.31). Thus, we see that things are not quite what they seem to be at first glance. One of the uses of the triangle function is in representing the optical transfer function of an incoherent imaging system whose limiting pupil is rectangular.

**The Sinc Function** We define the two-dimensional sinc function to be

$$\text{sinc} \left( \frac{x-x_0}{b}, \frac{y-y_0}{d} \right) = \text{sinc} \left( \frac{x-x_0}{b} \right) \text{sinc} \left( \frac{y-y_0}{d} \right). \quad (3.55)$$

This function describes the coherent impulse response of an imaging system with a rectangular pupil function; it is illustrated in Fig. 3-26, where we have let $x_0 = y_0 = 0$ and $b = 2d$ to simplify the drawing. The sinc$^2$ function is, of course, just

$$\text{sinc}^2 \left( \frac{x-x_0}{b}, \frac{y-y_0}{d} \right) = \text{sinc}^2 \left( \frac{x-x_0}{b} \right) \text{sinc}^2 \left( \frac{y-y_0}{d} \right). \quad (3.56)$$

and because its graph looks quite similar to that of the sinc function itself, we do not show this graph here. The sinc$^2$ function describes the incoherent impulse response of an imaging system with a rectangular pupil function. Both the sinc and sinc$^2$ functions have a volume equal to $|bd|$.