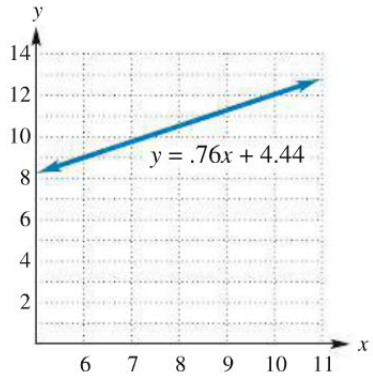
Applications

EXAMPLE: The world-wide sales (in billions of dollars) of men's razor blades can be approximated by the linear equation

$$y = .76x + 4.44$$

where $x = 6$ corresponds to the year 2006. The graph appears in the Figure below. (Data from: Wall Street Journal, April 12, 2012.)



(a) What were the approximate razor sales in 2011?

Solution: Substitute $x = 11$ in the equation and compute y:

$$y = .76x + 4.44$$

$$y = .76(11) + 4.44 = 12.80$$

The approximate sales in 2011 were \$12.8 billion.

(b) In what year did sales reach \$10.5 billion?

Solution: Substitute $y = 10.5$ in the equation and solve for x:

$$10.5 = .76x + 4.44$$

$$10.5 - 4.44 = .76x$$

$$x = \frac{10.5 - 4.44}{.76} = \frac{6.06}{.76} \approx 8.0$$

The year was 2008.