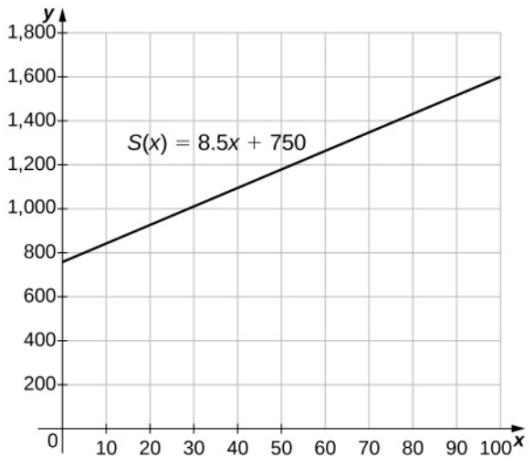
Exercise 57

The manager at a skateboard shop pays his workers a monthly salary S of \$750 plus a commission of \$8.50 for each skateboard they sell.

a. Write a function $y = S(x)$ that models a worker's monthly salary based on the number of skateboards x he or she sells.

b. Find the approximate monthly salary when a worker sells 25, 40, or 55 skateboards.

c. Use the INTERSECT feature on a graphing calculator to determine the number of skateboards that must be sold for a worker to earn a monthly income of \$1400. (*Hint*: Find the intersection of the function and the line $y = 1400$.)



Solution

Part (a)

The function is

$$S(x) = 750 + 8.50x.$$

Part (b)

A worker that sells 25, 40, or 55 skateboards makes

$$S(25) = 750 + 8.50(25) = \$962.50$$

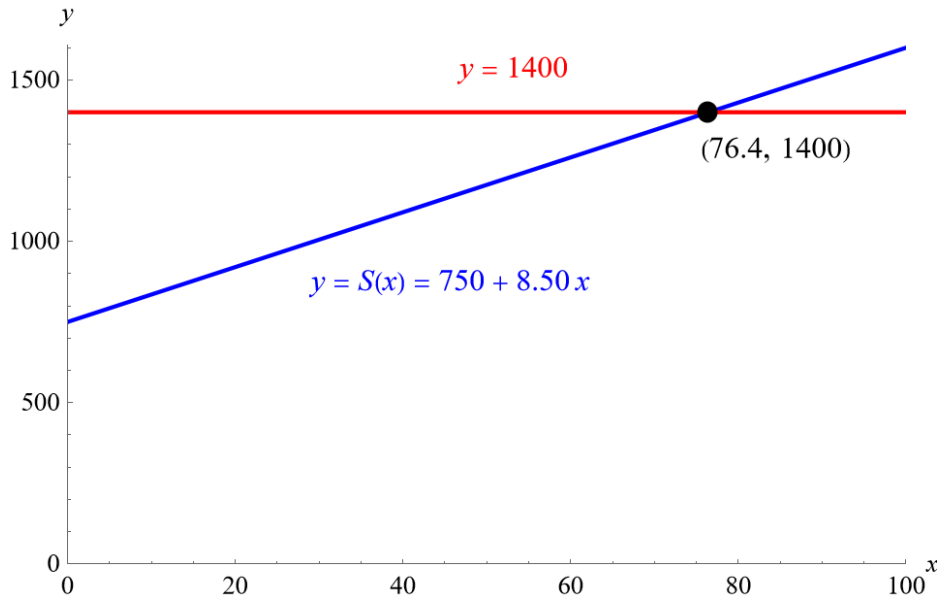
$$S(40) = 750 + 8.50(40) = \$1090.00$$

$$S(55) = 750 + 8.50(55) = \$1217.50,$$

respectively.

Part (c)

Graph $y = S(x)$ and $y = 1400$ in the same window.



The point that the lines intersect is roughly $(76.4, 1400)$. A worker has to sell more than 76 skateboards to make at least \$1400 per month.