

## Section 4.1

### Linear Functions

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$f(x) = y$$

$$m = \frac{f(x_2) - f(x_1)}{x_2 - x_1}$$

$$\begin{aligned} f(x_1) &= y_1 \\ f(x_2) &= y_2 \end{aligned}$$

$$f(x) = 3x - 7$$

$$g(x) = 5x + 2$$

find  $f(3)$

find  $g(x) = 0 \rightarrow (y=0)$

$$f(3) = 3(3) - 7 = \textcircled{2}$$

$$\begin{aligned} 0 &= 5x + 2 \\ -2 &= 5x \\ -2/5 &= x \end{aligned}$$

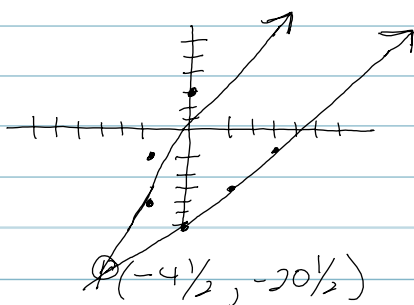
$$f(x) = g(x)$$

$$3x - 7 = 5x + 2$$

$$-7 = 2x + 2$$

$$-9 = 2x$$

$$\textcircled{\frac{-9}{2} = x}$$



roughly

$$\begin{aligned} &3x - 7 \\ &3(-9/2) - 7 \\ &\frac{-27 - 14}{2} \end{aligned}$$

$$\frac{-27 - 14}{2}$$

$$\frac{-41}{2} = -20\frac{1}{2}$$

#50  
281

total cost = variable cost + fixed cost

$$C(x) = 0.05x + 5$$

b)  $x = 105$  min. ?

$$C(105) = 0.05(105) + 5 \\ = \$10.25$$

$$\$ 25.80 = \text{total bill}$$

$$25.80 = 0.05x + 5$$

$$20.80 = 0.05x$$

$$416 = x$$

min.