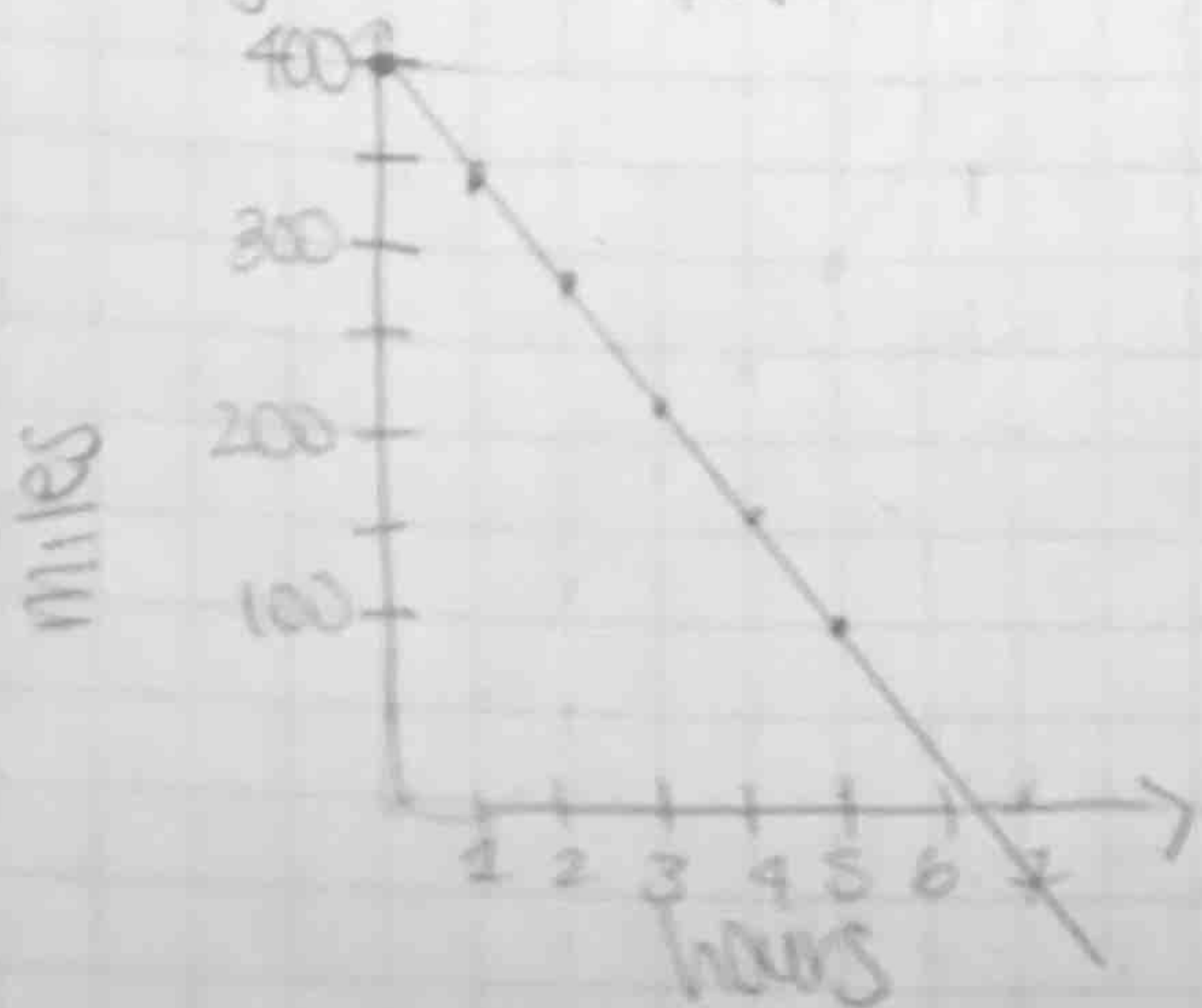


Practice Quiz Answers

1) $y = 400 - 60x$ $x = \text{hours}$ $y = \text{distance from home}$



2) Domain - $[0, 6\frac{2}{3}]$ you are traveling between 0 and $6\frac{2}{3}$ hours to get home.

Range - $[0, 400]$ you are anywhere from 0 to 400 miles away from home.

X-Intercept - $y=0 \rightarrow 0 = 400 - 60x$

* Gets home in $6\frac{2}{3}$ hours.

$$\frac{-400 - 400}{-60} = \frac{-60x}{-60}$$

$$\boxed{6\frac{2}{3} = x}$$

y-intercept - $x=0 \rightarrow$

* Starts 400 miles away from home.

$$y = 400 - 60(0)$$

$$\boxed{y = 400}$$

3) $y = 400 - 60x$
 $f(x) = 400 - 60x$

$$4) P(t) = \frac{45(1+0.6t)}{(3+0.02t)}$$

$t = \text{months}$
 $P(t) = \text{Population}$

$$a) t=0 \rightarrow P(0) = \frac{45(1+0.6(0))}{(3+0.02(0))}$$

$$\boxed{P(0) = 15} = \frac{45(1)}{(3)}$$

$$= \frac{45}{3}$$

$$= 15$$

b) 10 years = 120 months

$$t=120 \rightarrow P(120) = \frac{45(1+0.6(120))}{(3+0.02(120))}$$

$$\boxed{P(120) = 608} = \frac{45(1+72)}{(3+2.4)}$$

$$= \frac{45(73)}{5.4}$$

$$= \frac{3285}{5.4}$$

$$= 608 \frac{1}{3} \approx 608$$

5) (x, y)
 (miles, cost)

$(3, 7.75)$ and $(8, 10)$

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{10 - 7.75}{8 - 3} = \frac{2.25}{5} = 0.45$$

$$y = mx + b$$

$$y = 0.45x + b \leftarrow (8, 10)$$

$$10 = 0.45(8) + b$$

$$10 = 3.6 + b$$

$$\frac{-3.6 - 3.6}{-3.6 - 3.6}$$

$$6.4 = b$$

$$\boxed{y = 0.45x + 6.4}$$

6) rate of change = slope = 0.45
* Represents \$0.45 per mile

y-intercept = 6.4

* Represents the flat fee of \$6.40

7) Rectangle - 2 Parallel lines
2 perpendicular lines

$$y = 3x + 0 \rightarrow y = 3x + 1$$

$$y = -\frac{1}{3}x + 1 \rightarrow y = -\frac{1}{3}x + 5$$

2 lines with slope of 3 } different y-intercepts
2 lines with slope of $-\frac{1}{3}$ }

$$8) f(x) = 7x + 45 \rightarrow x = 7y + 45$$
$$y = 7x + 45 \rightarrow \frac{x - 45}{7} = \frac{7y}{7}$$
$$y = \frac{x - 45}{7}$$

$$f^{-1}(x) = \frac{x - 45}{7}$$

This shows given the price, how many people attended the party.

$$9) \begin{cases} 3x - 5y = 20 \\ 4x + y = 19 \end{cases} \rightarrow \begin{array}{r} 3x - 5y = 20 \\ 20x + 5y = 95 \end{array} +$$

$$4x + y = 19$$

$$4(5) + y = 19$$

$$-20 + y = 19$$

$$\frac{-20}{-20} \quad \frac{y}{-20} = \frac{19}{-20}$$

$$y = -1$$

$$\frac{23x}{23} = \frac{115}{23}$$

$$x = 5$$

$$\boxed{(5, -1)}$$

$$\begin{aligned} 10) \quad & \begin{cases} X + y = 30 \\ 20X + 15y = 510 \end{cases} \\ & \begin{array}{r} 20X + 15y = 510 \\ -15X + 15y = 450 \\ \hline 5X = 60 \end{array} \end{aligned}$$

$$\begin{aligned} \frac{5X}{5} &= \frac{60}{5} \\ X &= 12 \end{aligned}$$

$X = 20$ ton grain bins
 $y = 15$ ton grain bins

$$\begin{aligned} X + y &= 30 \\ 12 + y &= 30 \\ -12 & \quad -12 \\ \hline y &= 18 \end{aligned}$$

$$\boxed{(12, 18)}$$