

1.10 # 7, 9, 17, 19, 21, 23, 27, 29, 35, 39, 47, 53 & 57 solutions

7) P(2,2) Q(-10,0)

$$m = \frac{0-2}{-10-2} = \frac{-2}{-12} = \frac{1}{6}$$

9) P(2,4) Q(4,3)

$$m = \frac{3-4}{4-2} = \frac{-1}{2}$$

17) b = -3 m = $\frac{3}{2}$
 $y = \frac{3}{2}x - 3$

19) (2,3) m = 5

$$y - 3 = 5(x - 2)$$

$$y - 3 = 5x - 10$$

$$\begin{array}{r} +3 \quad +3 \\ \hline y = 5x - 7 \end{array}$$

21) (1,7) m = $\frac{2}{3}$

$$y - 7 = \frac{2}{3}(x - 1)$$

$$y - 7 = \frac{2}{3}x - \frac{2}{3}$$

$$\begin{array}{r} +7 \quad +7 \\ \hline y = \frac{2}{3}x + \frac{19}{3} \end{array}$$

23) (2,1) (1,6)

$$m = \frac{6-1}{1-2} = \frac{5}{-1} = -5$$

$$y - 1 = -5(x - 2)$$

$$y - 1 = -5x + 10$$

$$\begin{array}{r} +1 \quad +1 \\ \hline y = -5x + 11 \end{array}$$

27) x-intercept: (1,0) b = -3

$$y - 0 = -3(x - 1)$$

$$y = -3x + 3$$

29) (4,5) Parallel to x-axis
 ↑ (horizontal line)

$$y = 5$$

35) (-1,-2) ⊥ to $2x + 5y + 8 = 0$

$$m = \frac{5}{2}$$

$$y - (-2) = \frac{5}{2}(x - (-1))$$

$$y + 2 = \frac{5}{2}(x + 1)$$

$$y + 2 = \frac{5}{2}x + \frac{5}{2}$$

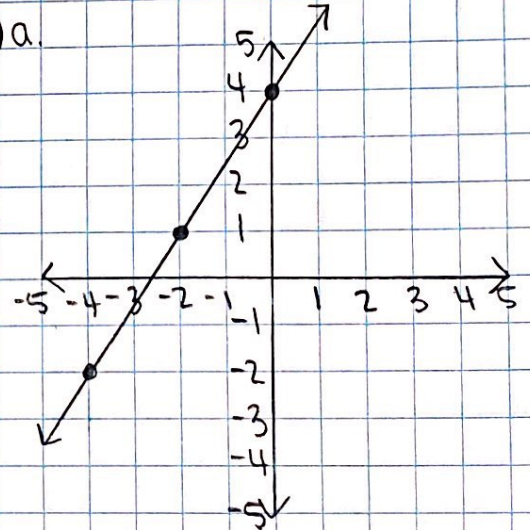
$$\begin{array}{r} -2 \quad -2 \\ \hline y = \frac{5}{2}x + \frac{1}{2} \end{array}$$

$$\begin{array}{r} 2x + 5y = -8 \\ -2x \quad -2x \\ \hline 5y = -2x - 8 \end{array}$$

$$\frac{5y}{5} = \frac{-2x - 8}{5}$$

$$y = -\frac{2}{5}x - \frac{8}{5}$$

39) a.



b. $y = \frac{3}{2}x + 4$

47) $x + 3y = 0$

$$\begin{array}{r} -x \quad -x \\ \hline 3y = -x \end{array}$$

$$\frac{3y}{3} = \frac{-x}{3}$$

$$y = -\frac{1}{3}x$$

slope: $-\frac{1}{3}$ y-intercept: (0,0)

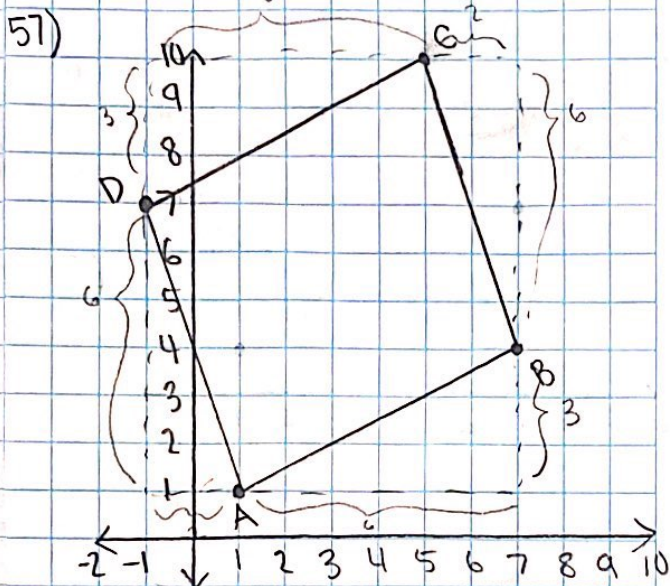
$$53) 3x - 4y = 12$$

$$\begin{array}{r} -3x \\ \hline -4y = -3x + 12 \end{array}$$

$$\frac{-4y}{-4} = \frac{-3x + 12}{-4}$$

$$y = \frac{3}{4}x - 3$$

slope: $\frac{3}{4}$ y-intercept: $(0, -3)$



* Show $\overline{AD} \parallel \overline{BC}$

? $\overline{DC} \parallel \overline{AB}$

$$m\overline{AB} = \frac{1}{2} \quad m\overline{DC} = \frac{1}{2}$$

$$\Rightarrow \overline{AB} \parallel \overline{DC}$$

$$m\overline{AD} = \frac{1}{3} \quad m\overline{BC} = \frac{1}{3}$$

$$\Rightarrow \overline{AD} \parallel \overline{BC}$$

\Rightarrow ABCD is a
parallelogram