

# Assign #10

New

Book pg. 137: 7, 9, 13, 15, 17, 21-37 odd

use substitution

7.  $2p + 3q = 2$

$$p - 3q = -17 \rightarrow p = 3q - 17$$

$$2(3q - 17) + 3q = 2$$

$$p = 3(4) - 17$$

$$6q - 34 + 3q = 2$$

$$p = 12 - 17$$

$$\begin{array}{r} 9q - 34 = 2 \\ +34 \quad +34 \end{array}$$

$$p = -5$$

$$\frac{9q = 36}{9} \quad \frac{36}{9}$$

$$\boxed{(-5, 4)}$$

$$q = 4$$

solve by elimination

9.  $(5x + 3y = 0) \cdot 5 \rightarrow -25x - 15y = 0$

$$(4x + 5y = 13) \cdot 3 \rightarrow 12x + 15y = 39$$

$$\begin{array}{r} -13x \quad = 39 \\ -13 \quad \quad -13 \end{array}$$

$$5(-3) + 3y = 0$$

$$x = -3$$

$$\begin{array}{r} -15 + 3y = 0 \\ +15 \quad +15 \end{array}$$

$$\frac{3y = 15}{3} \quad \frac{15}{3}$$

$$\boxed{(-3, 5)}$$

$$y = 5$$

use either method

13.  $(\frac{1}{4}x + y = \frac{7}{2}) \cdot 4 \rightarrow x + 4y = 14$

$$(2x - y = 4) \cdot 4 \rightarrow 8x - 4y = 16$$

$$\frac{9x}{9} = \frac{30}{9}$$

$$\frac{2(10)}{1(\frac{1}{3})} - y = \frac{4 \cdot 3}{1 \cdot 3}$$

$$x = \frac{10}{3}$$

$$\boxed{(\frac{10}{3}, \frac{8}{3})}$$

$$\frac{20}{3} - y = \frac{12}{3}$$

$$\begin{array}{r} -20 \\ \frac{20}{3} \end{array} \quad \begin{array}{r} -20 \\ \frac{12}{3} \end{array}$$

$$-y = -\frac{8}{3} \rightarrow y = \frac{8}{3}$$

Solve by substitution

15.  $4x - 3y = 18$

$3x + y = 7 \rightarrow y = -3x + 7$

$4x - 3(-3x + 7) = 18$

$y = -3(3) + 7$

$4x + 9x - 21 = 18$   
+21 +21

$y = -9 + 7$

$y = -2$

$\frac{13x}{13} = \frac{39}{13}$

$(3, -2)$

$x = 3$

17.  $3r + 9s = 36 \rightarrow 3(8s - 10) + 9s = 36$

$r = 8s - 10$

$24s - 30 + 9s = 36$   
+30 +30

$r = 8(2) - 10$

$\frac{33s}{33} = \frac{66}{33}$

$r = 16 - 10$

$r = 6$

$s = 2$

$(6, 2)$

Solve by elim.

21.  $(x - 3y = -12) - 2 \rightarrow -2x + 6y = 24$

$2x + 11y = -7$

$2x + 11y = -7$

$\frac{17y}{17} = \frac{17}{17}$

$x - 3(1) = -12$

+3 +3

$x = -9$

$(-9, 1)$

$y = 1$

# Assign #10 cont

23.  $(4p + 5q = 7) \cdot 2 \rightarrow 8p + 10q = 14$   
 $(3p - 2q = 34) \cdot 5 \rightarrow 15p - 10q = 170$

$$\begin{array}{r} 23p \\ \underline{23} \end{array} = \frac{184}{23}$$

$$\begin{array}{r} 4(8) + 5q = 7 \\ 32 + 5q = 7 \\ \underline{-32} \quad \underline{-32} \end{array}$$

$p = 8$

$$\frac{5q}{5} = \frac{-25}{5}$$

$(8, -5)$

$q = -5$

25.  $(\frac{1}{3}x + \frac{1}{2}y = 7) \cdot 6 \rightarrow 2x + 3y = 42$

$(\frac{2}{3}x - y = -2) \cdot 3 \rightarrow -2x + 3y = 6$

$$\frac{6y}{6} = \frac{48}{6}$$

$$\begin{array}{r} \frac{2}{3}x - 8 = -2 \\ \underline{+8} \quad \underline{+8} \end{array}$$

$y = 8$

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

$(9, 8)$

$$x = \frac{3}{1} \cdot \frac{3}{2}$$

$x = 9$

use either method

27.  $3x - 7y = 5$

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

$$x = -3\left(-\frac{1}{2}\right) - 1$$

$3(-3y - 1) - 7y = 5$

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

$$\begin{array}{r} -9y - 3 - 7y = 5 \\ \underline{+3} \quad \underline{+3} \end{array}$$

$x = \frac{1}{2}$

$(\frac{1}{2}, -\frac{1}{2})$

$$\begin{array}{r} -16y = 8 \\ \underline{-16} \quad \underline{-16} \end{array} \rightarrow y = -\frac{1}{2}$$

$$29. \quad (2a - b = 8) \cdot 3 \rightarrow -6a + 3b = -24$$

$$6a + 3b = -9 \quad \underline{6a - 3b = -9}$$

$$0 = -33$$

never happens!

**NO solution**

$$31. \quad y = 5x + 37$$

$$2x - 3y = -20$$

$$2x - 3(5x + 37) = -20$$

$$2x - 15x - 111 = -20$$

$$\begin{array}{r} -13x = 91 \\ \underline{-13} \quad \underline{-13} \end{array}$$

$$y = 5(-7) + 37$$

$$y = -35 + 37$$

$$y = 2$$

$$x = -7$$

**(-7, 2)**

$$33. \quad y = 3x - 27$$

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

$$3x - 27 = \frac{1}{2}x - 7$$

$$\begin{array}{r} -\frac{1}{2}x + 27 \\ \underline{-\frac{1}{2}x + 27} \end{array}$$

$$\frac{5}{2}x - \frac{1}{2}x = 20$$

$$\frac{5}{2}x = 20$$

$$\frac{5}{2} \quad \frac{5}{2}$$

$$x = \frac{20}{1} \cdot \frac{2}{5}$$

$$y = 3(8) - 27$$

$$y = 24 - 27$$

$$y = -3$$

$$x = 8$$

**(8, -3)**

# Assign #10 cont

$$35. \left(\frac{1}{4}x + \frac{3}{5}y = -3\right) \cdot 20 \rightarrow 5x + 12y = -60$$
$$\left(\frac{3}{4}x - \frac{2}{5}y = 13\right) \cdot 20 \rightarrow 15x - 8y = 260$$

$$\begin{array}{r} (5x + 12y = -60) \cdot -3 \rightarrow -15x - 36y = 180 \\ 15x - 8y = 260 \\ \hline -44y = 440 \\ -44 \quad -44 \\ \hline y = -10 \end{array}$$

$$\frac{1}{4}x + \frac{3}{5}\left(\frac{-10}{1}\right) = -3$$
$$\frac{1}{4}x - 6 = -3$$
$$\frac{1}{4}x = 3$$

$$\frac{1}{4}x = 3$$
$$\frac{1}{4}x \quad \frac{1}{4}$$

$$(12, -10)$$

$$x = 3 \cdot 4$$

$$x = 12$$

$$37. (1.5a - 0.2b = -8.3) \cdot 2 \Rightarrow 3.0a - 0.4b = -16.6$$

$$0.4a + 0.4b = -0.4$$

$$0.4a + 0.4b = -0.4$$

$$0.4(-5) + 0.4b = -0.4$$

$$3.4a = -17.0$$

$$3.4 \quad 3.4$$

$$\begin{array}{r} -2 + 0.4b = -0.4 \\ +2 \quad +2 \\ \hline 0.4b = 1.6 \\ .4 \quad .4 \\ \hline b = 4 \end{array}$$

$$a = -5$$

$$0.4b = 1.6$$
$$\frac{0.4b}{.4} = \frac{1.6}{.4}$$

$$b = 4$$

$$3.4 \overline{) 17.0}$$
$$\underline{-17.0}$$
$$0$$

$$(-5, 4)$$

# Review

Packet

$$\begin{aligned} 1. \quad & \frac{1}{3}(15a + 9b) - \frac{1}{7}(28a - 84b) \\ & = 5a + 3b - 4a + 12b \\ & = \boxed{a + 15b} \end{aligned}$$

$$\begin{aligned} 2. \quad & 7x - (2x + 3) = x - 2 \\ & 7x - 2x - 3 = x - 2 \\ & \frac{5x - 3}{-x + 3} = \frac{x - 2}{-x + 3} \\ & \frac{4x}{4} = \frac{1}{4} \\ & \boxed{x = \frac{1}{4}} \end{aligned}$$

$$3. \quad |2x + 7| = 9$$

$$\begin{array}{r} 2x + 7 = 9 \\ -7 \quad -7 \\ \hline 2x = 2 \end{array}$$

$$\begin{array}{r} \frac{2x}{2} = \frac{2}{2} \\ x = 1 \end{array}$$

$$\begin{array}{r} 2x + 7 = -9 \\ -7 \quad -7 \\ \hline 2x = -16 \end{array}$$

$$\begin{array}{r} \frac{2x}{2} = \frac{-16}{2} \\ x = -8 \end{array}$$

$$\boxed{x = 1, -8}$$

$$4. \quad |1 - 3y| = 1$$

$$\begin{array}{r} 1 - 3y = 1 \\ -1 \quad -1 \\ \hline -3y = 0 \\ -3 \quad -3 \\ \hline y = 0 \end{array}$$

$$y = 0$$

$$\begin{array}{r} 1 - 3y = -1 \\ -1 \quad -1 \\ \hline -3y = -2 \\ -3 \quad -3 \\ \hline y = \frac{2}{3} \end{array}$$

$$y = \frac{2}{3}$$

$$\boxed{y = 0, \frac{2}{3}}$$

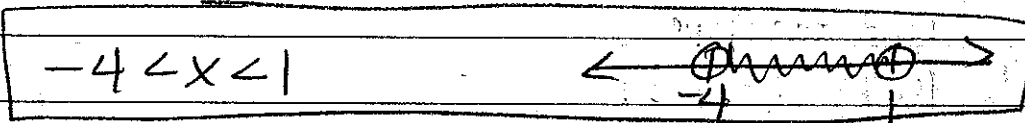
# Assign 10 cont

5.  $|2x + 3| < 5$

$$\begin{array}{r} 2x + 3 < 5 \\ -3 \quad -3 \end{array} \quad \begin{array}{r} 2x + 3 > -5 \\ -3 \quad -3 \end{array}$$

$$\begin{array}{r} 2x < 2 \\ 2 \quad 2 \end{array} \quad \begin{array}{r} 2x > -8 \\ 2 \quad 2 \end{array}$$

$$x < 1 \quad x > -4$$



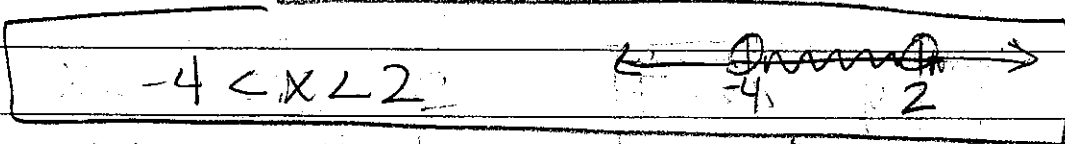
6.  $4 - |x + 1| > -4$

$$\begin{array}{r} -|x + 1| > -3 \\ -1 \quad -1 \end{array}$$

$$|x + 1| < 3$$

$$\begin{array}{r} x + 1 < 3 \\ -1 \quad -1 \end{array} \quad \begin{array}{r} x + 1 > -3 \\ -1 \quad -1 \end{array}$$

$$x < 2 \quad x > -4$$

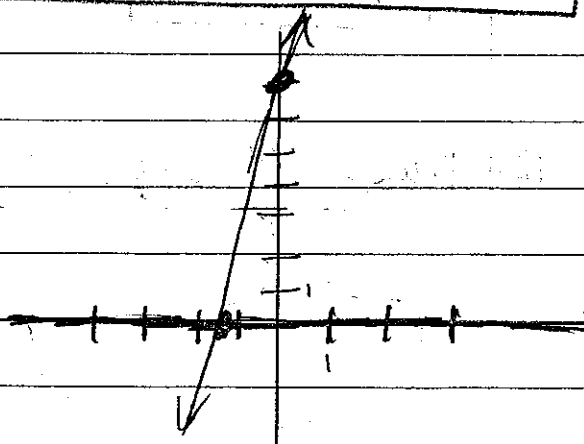


find x + y int + graph

7.  $6x - y = -7$

x-int:  $(\frac{7}{6}, 0)$

y-int:  $(0, 7)$



Find x + y int + graph

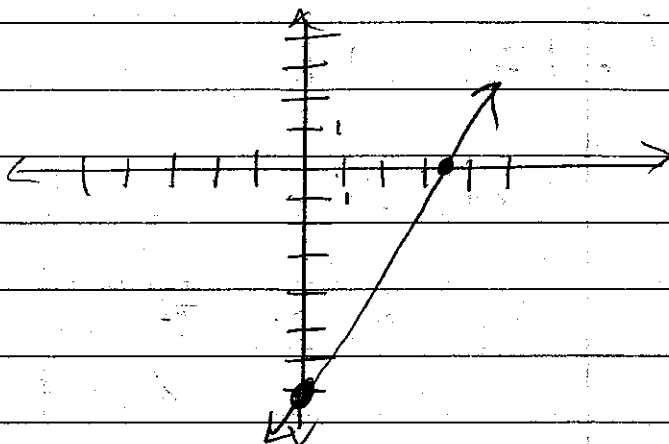
8.

$$y = 2x - 7$$

$$x\text{-int: } (\frac{7}{2}, 0)$$

$$7 = 2x$$

$$y\text{-int: } (0, -7)$$



Find the slope

9.  $(5, 7), (-2, -3)$

$$x_1 \quad y_1 \quad x_2 \quad y_2$$

$$m = \frac{-3 - 7}{-2 - 5} = \frac{-10}{-7} = \frac{10}{7} = m$$

10.  $(2\frac{1}{2}, -\frac{1}{2}), (-\frac{1}{2}, \frac{1}{2}) \rightarrow (\frac{5}{2}, -\frac{3}{2}), (-\frac{1}{2}, \frac{1}{2})$

$$m = \frac{\frac{1}{2} + \frac{3}{2}}{-\frac{1}{2} - \frac{5}{2}} = \frac{\frac{4}{2}}{-\frac{6}{2}} = \frac{2}{-3} = m$$

write in slope-int form

11. Slope = -4 and passes through  $(-3, -5)$

$$y = -4x + b \rightarrow -5 = -4(-3) + b$$

$$-5 = -12 + b$$

$$+12 \quad +12$$

$$7 = b$$

$$y = -4x + 7$$

12. passes through  $(1, 3)$  &  $(-3, 7)$

$$m = \frac{7 - 3}{-3 - 1} = \frac{4}{-4} = -1 \rightarrow y = -x + b$$

$$3 = -(1) + b$$

$$+1 \quad +1$$

$$4 = b$$

$$y = -x + 4$$



13. passes through  $(-6, 1)$  & perp to  $y = 3x - 2$

$$m = -\frac{1}{3} \quad y = -\frac{1}{3}(x) + b$$

$$1 = -\frac{1}{3}(\frac{-6}{1}) + b$$

$$1 = 2 + b$$

$$\begin{array}{r} 2 \\ -2 \\ \hline -1 = b \end{array}$$

$$-1 = b$$

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

14. passes through  $(-2, 5)$ ,  $(3, 1)$

$$m = \frac{1-5}{3-(-2)} = \frac{-4}{5}$$

$$y = -\frac{4}{5}x + b$$

$$1 = -\frac{4}{5}(\frac{3}{1}) + b$$

$$1 = -\frac{12}{5} + b$$

$$\frac{5}{5} + \frac{12}{5} = -\frac{12}{5} + b$$

$$\begin{array}{r} \frac{5}{5} \\ + \frac{12}{5} \\ \hline \frac{17}{5} = b \end{array}$$

$$\frac{17}{5} = b$$

$$y = -\frac{4}{5}x + \frac{17}{5}$$

USE calc:  $15 - 17$

15.  $y = (x+1)(x-3)$

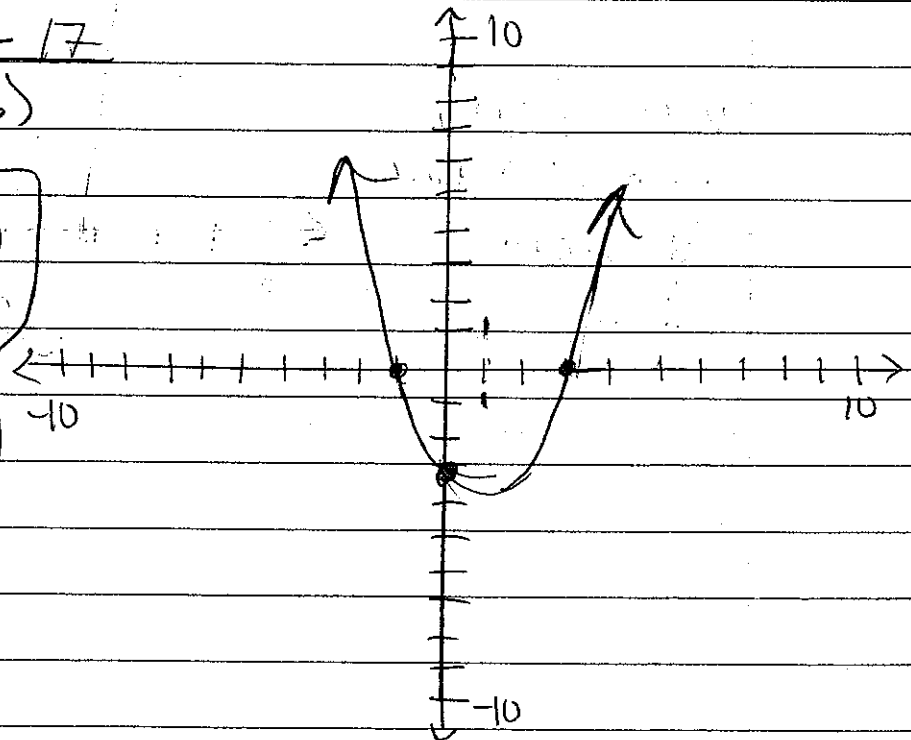
x-ints:  $(-1, 0)$   
 $(3, 0)$

y-int:  $(0, -3)$

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

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

$$y = -3$$

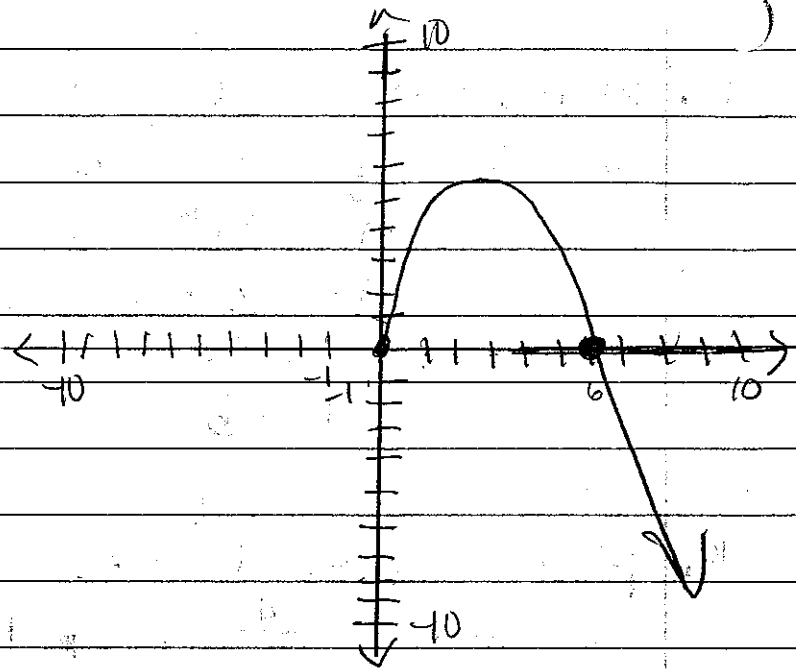


16.  $y = (6-x)\sqrt{x}$

X-int:  $(0,0)$   
 $(6,0)$

Y-int:  $(0,0)$

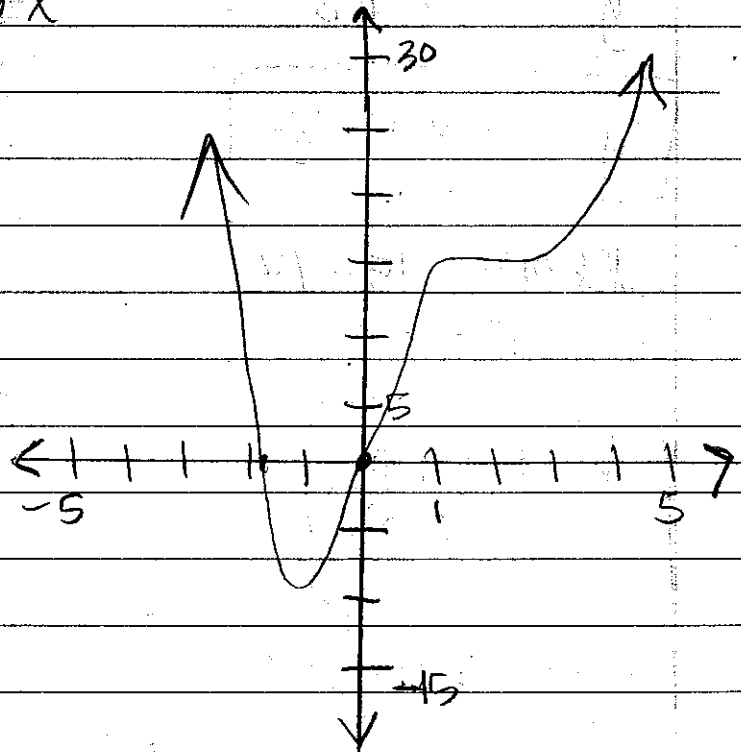
$y = (6-0)\sqrt{0}$   
 $y = (6 \times 0)$   
 $y = 0$



17.  $y = x^4 - 4x^3 + 16x$

X-int:  $(-1.67, 0)$   
 $(0, 0)$

Y-int:  $(0, 0)$   
 $y = 0^4 - 4(0)^3 + 16(0)$   
 $y = 0 - 0 + 0$   
 $y = 0$



Assign #10  
cont

Book pg 130: 18 (no calc)

graph the system

18.  $2x + 3y = 12$

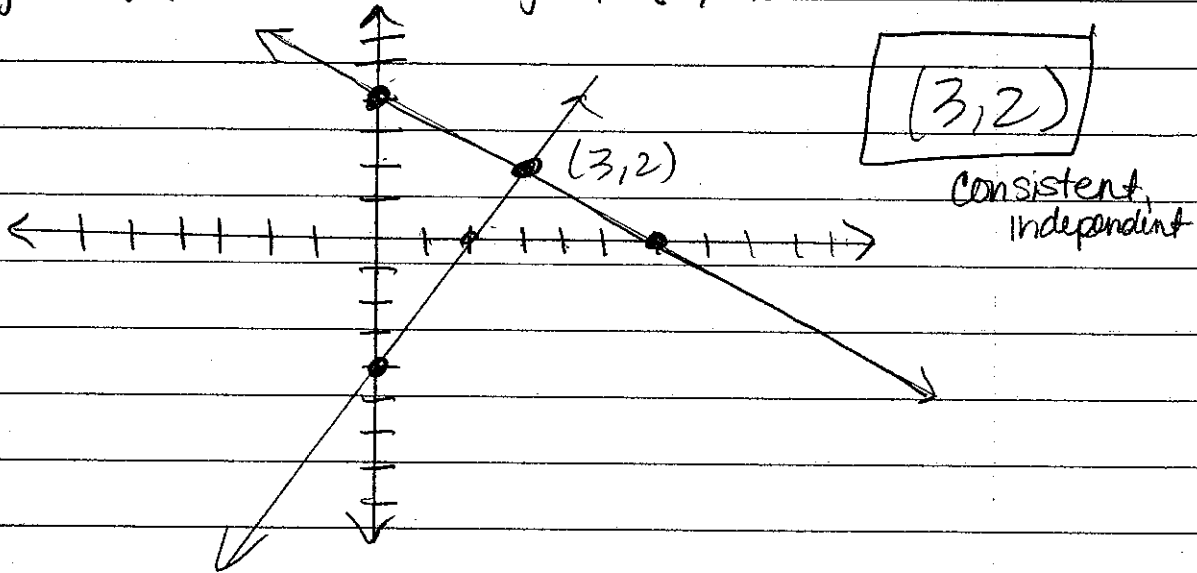
x-int:  $(6, 0)$

y-int:  $(0, 4)$

$2x - y = 4$

x-int:  $(2, 0)$

y-int:  $(0, -4)$

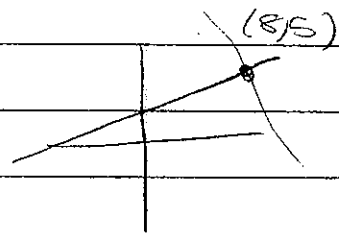


Book pg 125: 2, 8 (calc)

2.  $y = \frac{1}{4}x + 3$

$y = -2x + 21$

$(8, 5)$



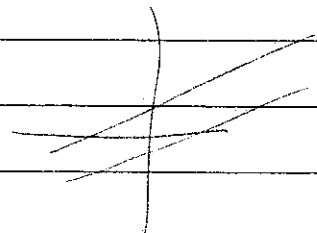
8.  $\frac{12y}{12} = \frac{4x - 16}{12}$

$y = \frac{1}{3}x - \frac{4}{3}$

$9y - 3x = 3$

$9y = 3x + 3$

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



no solution

(parallel)

	<p>1. The first part of the document discusses the importance of maintaining accurate records in a business context. It highlights how proper record-keeping can lead to better decision-making and operational efficiency.</p>
	<p>2. In addition, the document emphasizes the role of technology in streamlining record-keeping processes. Modern software solutions can significantly reduce the time and effort required to manage large volumes of data.</p>
	<p>3. Furthermore, it is noted that consistent record-keeping is essential for compliance with various regulatory requirements. This helps businesses avoid legal penalties and maintain their reputation.</p>
	<p>4. The document also explores the benefits of data analysis derived from well-maintained records. By identifying trends and patterns, businesses can optimize their operations and improve customer satisfaction.</p>
	<p>5. Finally, the document concludes by stating that investing in robust record-keeping systems is a long-term strategy for business success and growth.</p>
	<p>6. The second section of the document focuses on the challenges associated with digital record-keeping. It discusses issues such as data security, privacy concerns, and the potential for system downtime.</p>
	<p>7. To address these challenges, the document recommends implementing strong cybersecurity measures and regular data backups. It also suggests educating employees on data protection best practices.</p>
	<p>8. Additionally, the document highlights the importance of having a disaster recovery plan in place to ensure that critical data can be restored in the event of a system failure or natural disaster.</p>
	<p>9. The document also touches upon the legal implications of digital records, such as the need for digital signatures and secure storage to ensure their authenticity and integrity.</p>
	<p>10. In conclusion, while digital record-keeping offers significant advantages, it also presents unique challenges that must be carefully managed to ensure the security and reliability of business data.</p>
	<p>11. The final part of the document provides a summary of the key points discussed and offers practical recommendations for businesses looking to optimize their record-keeping practices.</p>