

5.5 Standard Form

pg. 326 # 8-22 even, 32-44 even & 52-60 even

	x-intercept	y-intercept
8)	$(9, 0)$	$(0, 9)$
10)	$(-\frac{7}{3}, 0)$	$(0, \frac{7}{3})$
12)	$(3, 0)$	$(0, -2)$

14) - 16) see graphs

	x-intercept	y-intercept
18)	$(-3, 0)$	$(0, -3)$
20)	$(-4, 0)$	$(0, 8)$
22)	$(3, 0)$	$(0, -9)$

* see graphs

32) $Ax + By = C$

$$\begin{aligned}
 y + 3 &= 4(x - 1) \\
 y + 3 &= 4x - 4 \\
 -3 &\quad -3 \\
 y &= 4x - 7 \\
 -4x &\quad -4x \\
 -1(-4x + y &= -7) \\
 \hline
 4x + -y &= 7
 \end{aligned}$$

34) $Ax + By = C$

$$\begin{aligned}
 y &= \frac{1}{4}x - 2 \\
 -\frac{1}{4}x &\quad -\frac{1}{4}x \\
 -4(-\frac{1}{4}x + y &= -2) \\
 \hline
 1x + -4y &= 8
 \end{aligned}$$

$$Ax + By = C$$

$$36) \quad y + 2 = \frac{2}{3}(x + 4)$$

$$y + 2 = \frac{2}{3}x + \frac{8}{3}$$

$$y = \frac{2}{3}x + \left(\frac{8}{3} - \frac{6}{3}\right)$$

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

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

$$2x + -3y = -2$$

$$38) \quad 12t + 15s = 120$$

$$x\text{-intercept} = (10, 0)$$

$$y\text{-intercept} = (0, 8)$$

other
order pair $(5, 4)$
*found after graphing

*see graph

$$40) \quad 3p + 2w = 24$$

$$x\text{-intercept} = (8, 0)$$

$$y\text{-intercept} = (0, 12)$$

*see graph

$$42) \quad Ax + By = C$$

rewrite to $y = mx + b$

$$Ax + By = C$$

$$-Ax \quad -Ax$$

$$\frac{By}{B} = \frac{-Ax + C}{B}$$

$$y = -\frac{A}{B}x + \frac{C}{B}$$

$$\text{Slope} = -\frac{A}{B}$$

$$y\text{-intercept} = \frac{C}{B}$$

44) If both coefficients

are zero, you are
only left with

constants. You
need at least an

x or y , for a
 x -coordinate or

y -coordinate in order to graph.

$$56) \begin{matrix} (3, -8) \\ (4, 13) \end{matrix} \frac{\Delta y}{\Delta x} = \frac{-8-13}{3-4} = \frac{-21}{-1} = 21$$

$$y = -3x + b, (-4, 13)$$

$$y = -3x + 1$$

$$\begin{aligned} 13 &= -3(-4) + b \\ 13 &+ 12 = b \\ -12 &-12 \\ 1 &= b \end{aligned}$$

$$\begin{aligned} \text{x-intercept: } 0 &= -3x + 1 \\ -1 & \quad -1 \\ -1 &= -3x \\ -3 & \end{aligned}$$

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

$$\begin{aligned} \text{y-intercept: } y &= -3(0) + 1 \\ y &= 1 \\ (0, 1) \end{aligned}$$

$$58) 63 = 3x + 7y$$

$$\text{x-intercept} = (21, 0)$$

$$\text{y-intercept} = (0, 9)$$

* Based on graph test other points...

$$\begin{aligned} (14, 3) \quad 63 &= 3(14) + 7(3) \\ 63 &= 42 + 21 \\ 63 &= 63 \checkmark \end{aligned}$$

OR

$$\begin{aligned} (7, 6) \quad 63 &= 3(7) + 7(6) \\ 63 &= 21 + 42 \\ 63 &= 63 \checkmark \end{aligned}$$

$$52) \begin{array}{l} (-6, 4) \\ (3, -5) \end{array} \frac{\Delta y}{\Delta x} = \frac{4 - (-5)}{-6 - 3} = \frac{9}{-9} = -1$$

$$y = -1x + b, (3, -5)$$

$$-5 = -1(3) + b$$

$$-5 = -3 + b$$

$$+3 \quad +3$$

$$-2 = b$$

$$y = -1x - 2$$

$$\text{x-intercept} = (-2, 0)$$

$$\text{y-intercept} = (0, -2)$$

$$54) \begin{array}{l} (-7, 6) \\ (-4, 11) \end{array} \frac{\Delta y}{\Delta x} = \frac{6 - 11}{-7 - (-4)} = \frac{-5}{-3} = \frac{5}{3}$$

$$y = \frac{5}{3}x + b, (-7, 6)$$

$$6 = \frac{5}{3}(-7) + b$$

$$6 = \frac{-35}{3} + b$$

$$+ \frac{35}{3} \quad + \frac{35}{3}$$

$$\left(\frac{18}{3} + \frac{35}{3} \right) = b$$

$$\frac{55}{3} = b$$

$$y = \frac{5}{3}x + \frac{55}{3}$$

$$\text{x-intercept: } 0 = \frac{5}{3}x + \frac{55}{3}$$

$$-\frac{55}{3} \quad -\frac{55}{3}$$

$$\left(-\frac{55}{3} = \frac{5}{3}x \right) \cdot \frac{3}{5}$$

$$-\frac{55}{5} = x$$

$$\left(-\frac{55}{5}, 0 \right)$$

$$\text{y-intercept: } y = \frac{5}{3}(0) + \frac{55}{3}$$

$$y = 0 + \frac{55}{3}$$

$$y = \frac{55}{3}$$

$$\left(0, \frac{55}{3} \right)$$

60) $(-4, -7)$ $y+3 = 5(x+4)$
 $m = 5$

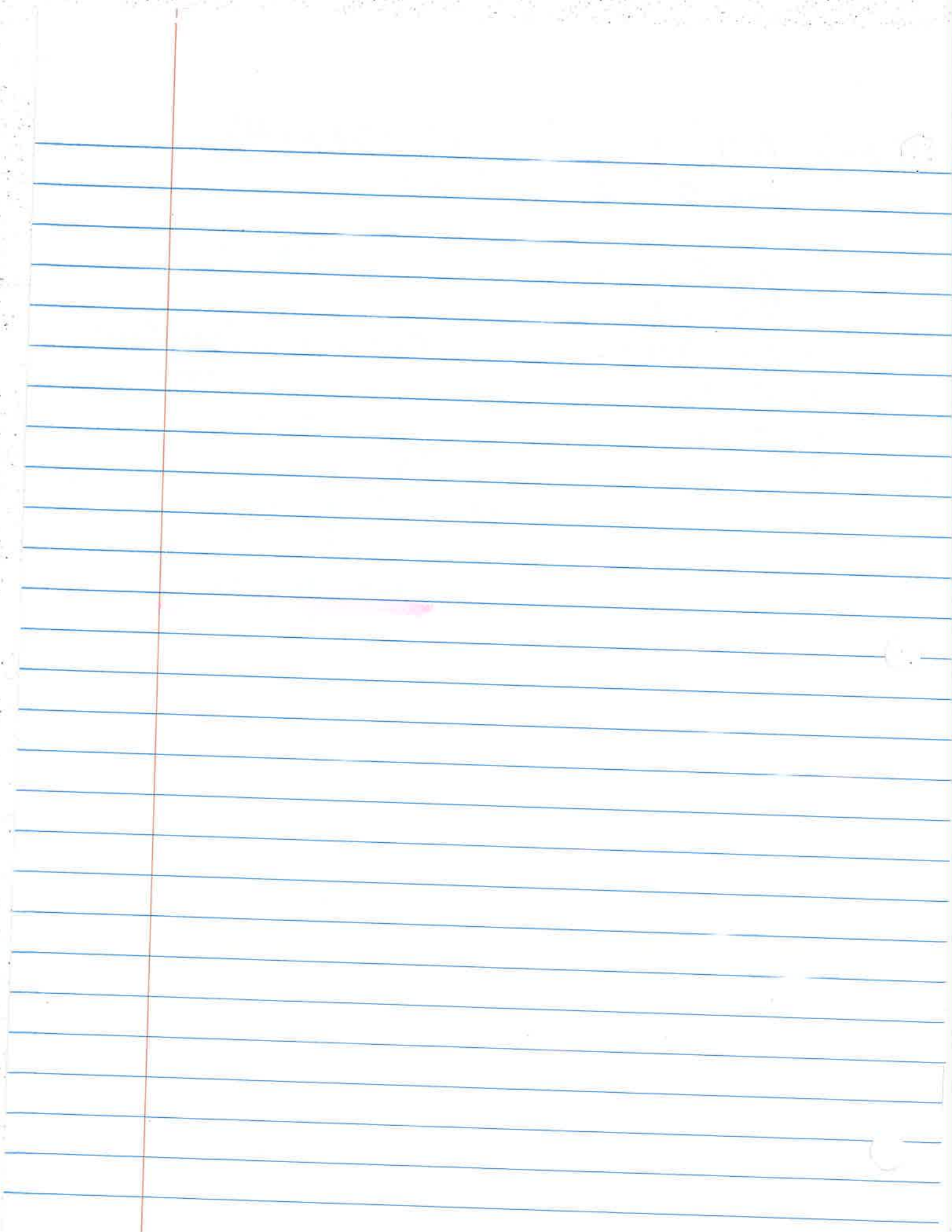
$$\begin{aligned}y &= 5x + b \\ -7 &= 5(-4) + b \\ -7 &= -20 + b \\ +20 \quad +20 \\ 13 &= b\end{aligned}$$

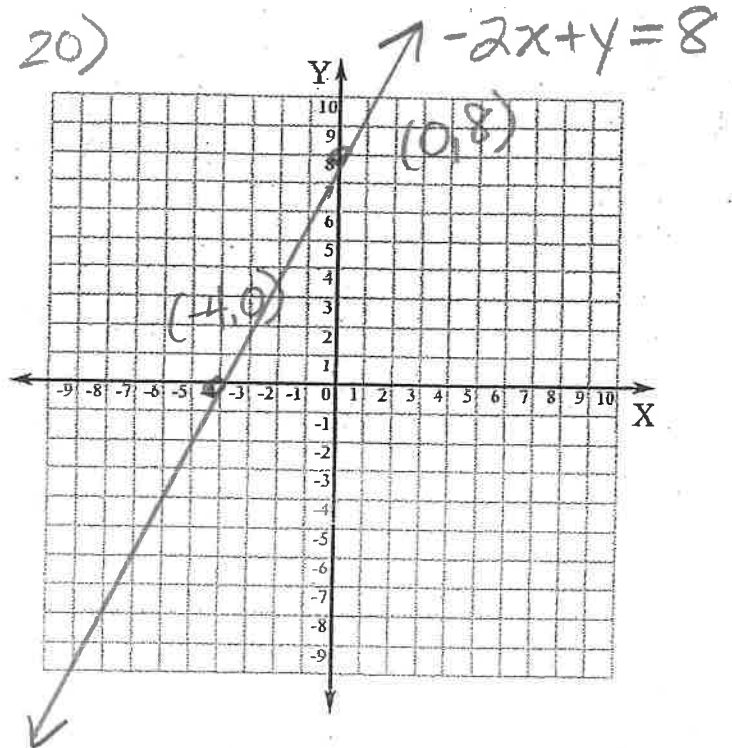
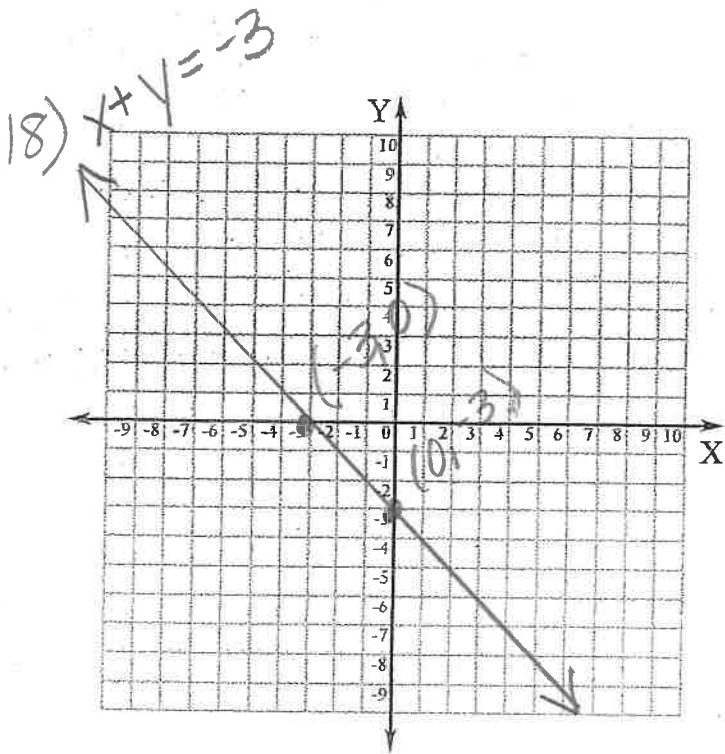
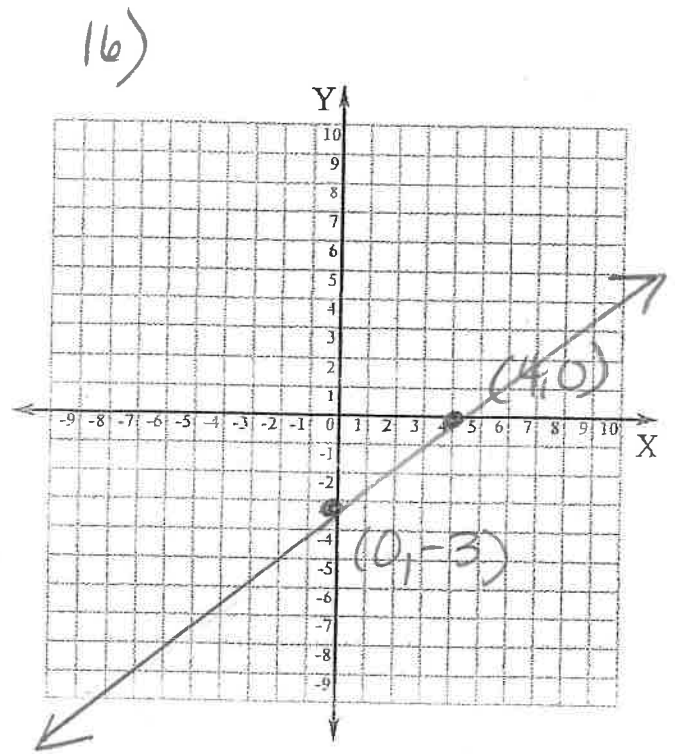
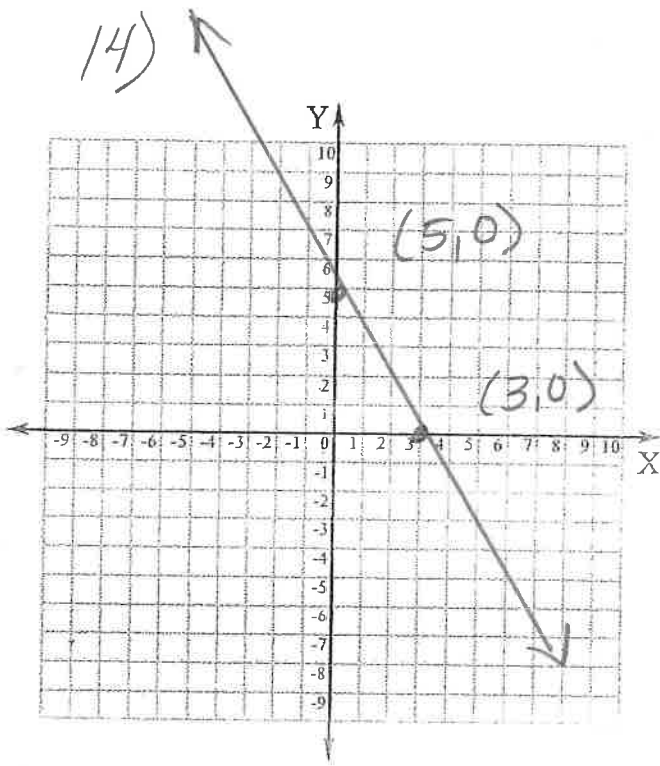
$$\rightarrow y = 5x + 13$$

Rewrite in Standard Form

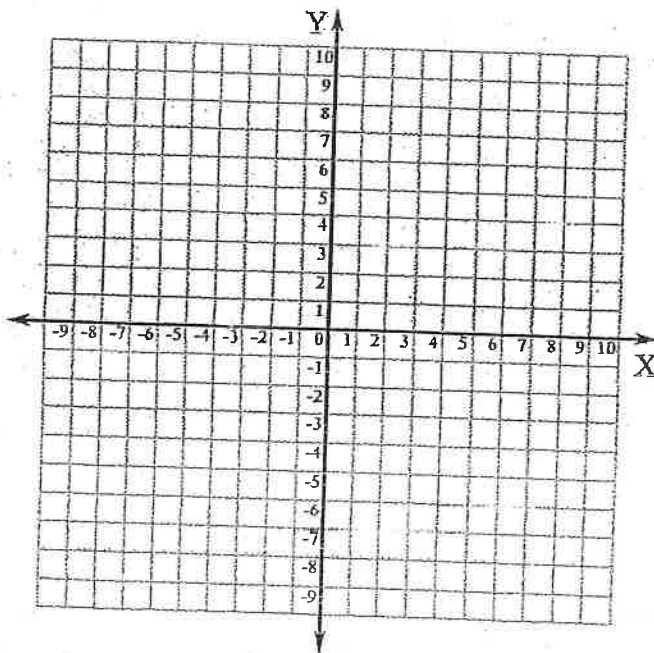
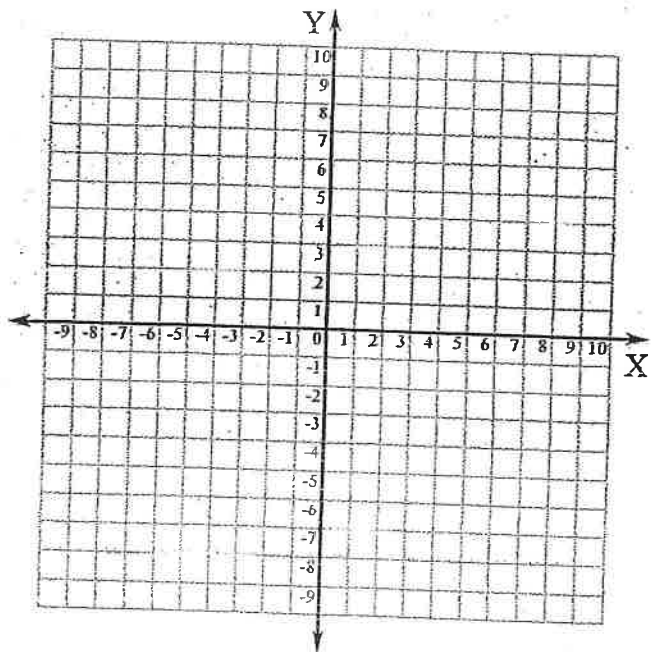
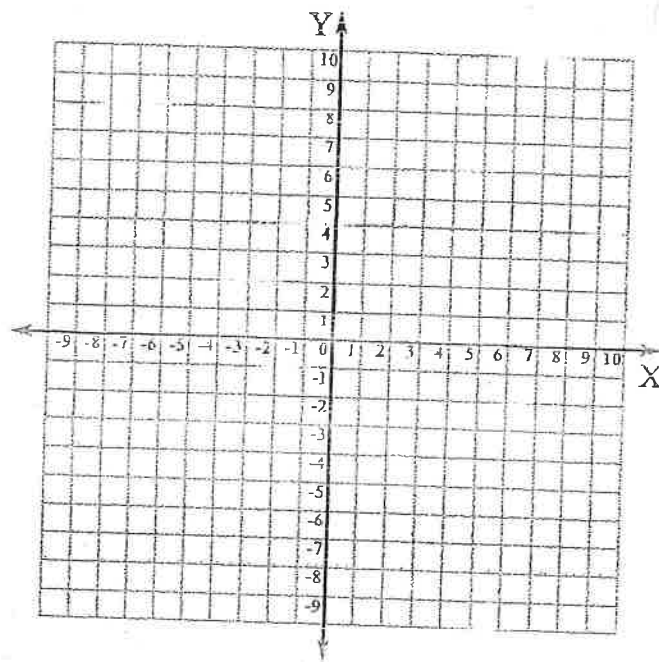
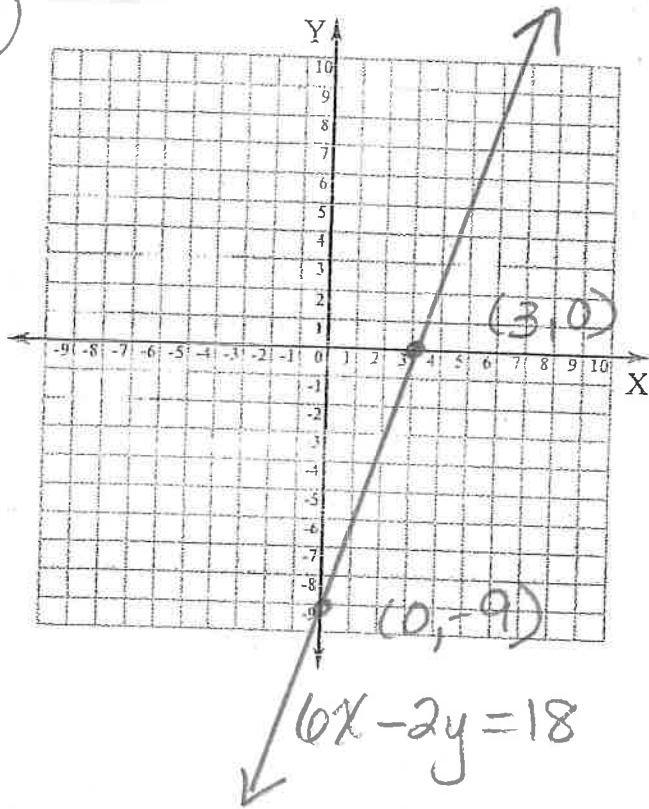
$$\begin{aligned}y &= 5x + 13 \\ -5x \quad -5x \\ -1(-5x + y = 13)\end{aligned}$$

$$\boxed{5x + -y = -13}$$

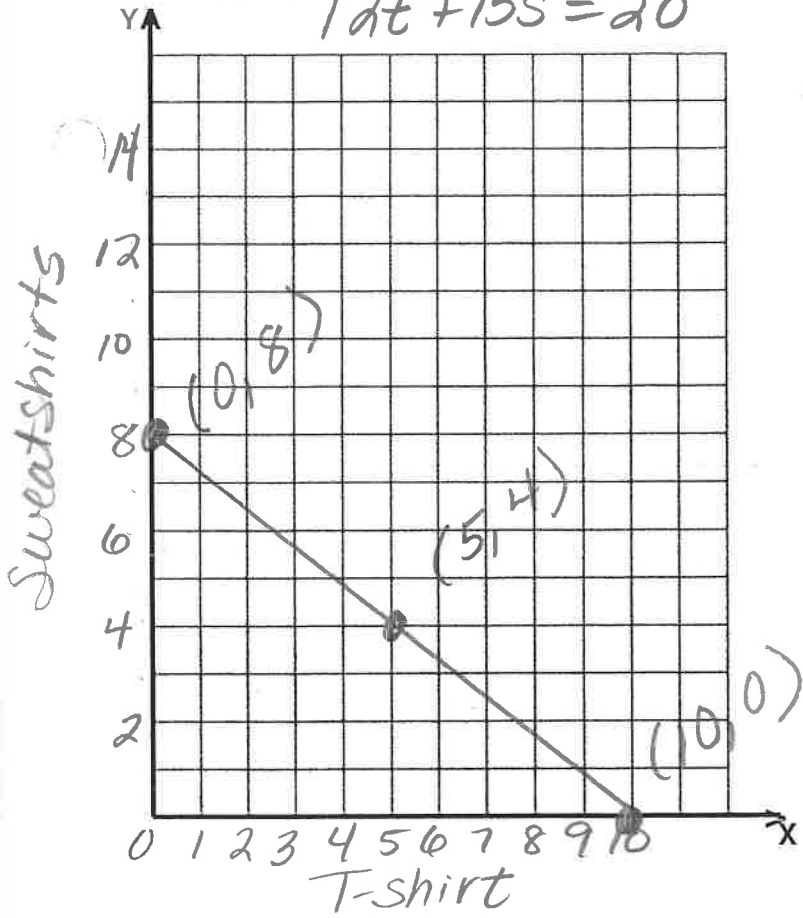




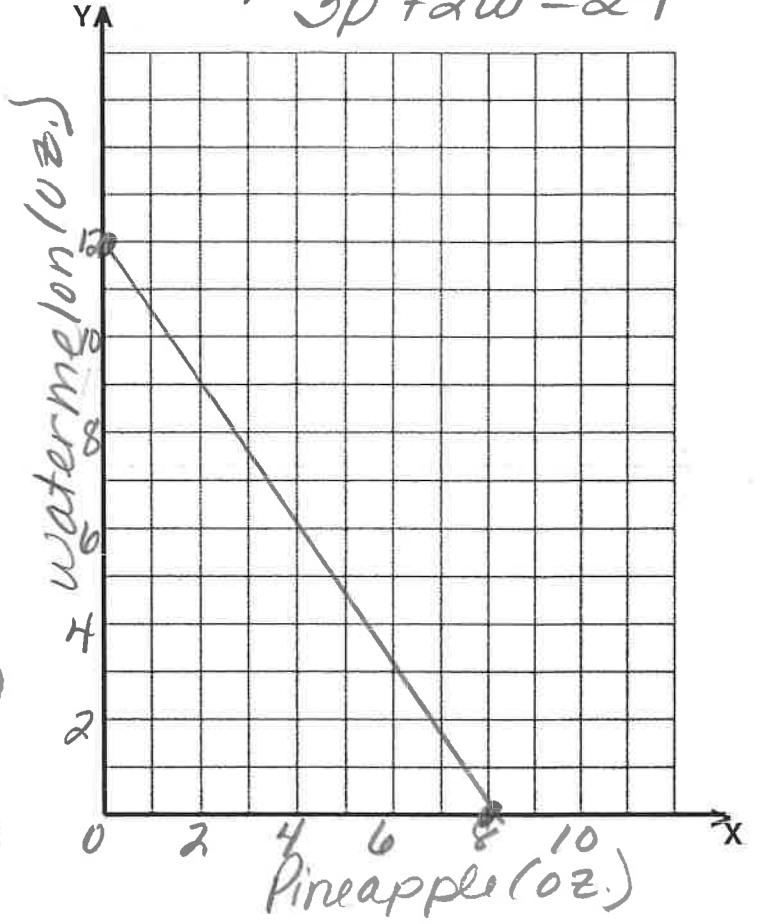
22)



38) $12t + 15s = 20$



40) $3p + 2w = 24$



58)

