

Write the equation in both standard and slope intercept form.

+5 < 1. $\begin{pmatrix} 5, -2 \\ 10, -4 \end{pmatrix}$ > -2 $m = -2/5$

$$y = -2/5x + c$$

$$-2 = -2/5[5] + c$$

$$-2 = -2 + c$$

$$0 = c$$

$$y = -2/5x$$

$$5 \left[\frac{2}{5}x + y = 0 \right]$$

$$2x + 5y = 0$$

Standard $2x + 5y = 0$

Slope Int $y = -2/5x$

-3 < 2. $\begin{pmatrix} -3, 3 \\ -6, 7 \end{pmatrix}$ > +4 $m = -4/3$

$$y = -4/3x + c$$

$$7 = -4/3[-6] + c$$

$$7 = 8 + c$$

$$-1 = c$$

$$y = -4/3x - 1$$

$$3 \left[\frac{4}{3}x + y = -1 \right]$$

$$4x + 3y = -3$$

Standard $4x + 3y = -3$

Slope Int $y = -4/3x - 1$

3. $\begin{pmatrix} 7, 5 \end{pmatrix}$ $m = 3/7$

$$y = 3/7x + c$$

$$5 = 3/7[7] + c$$

$$5 = 3 + c$$

$$2 = c$$

$$y = 3/7x + 2$$

$$-7 \left[-3/7x + y = 2 \right]$$

$$3x - 7y = -14$$

Standard $3x - 7y = -14$

Slope Int $y = 3/7x + 2$

Write each equation in standard form

4. $y = \frac{4}{5}x - 3$

$$-5 \left[\frac{4}{5}x + y = -3 \right]$$

$$4x - 5y = 15$$

Standard $4x - 5y = 15$

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

$$7 \left[\frac{2}{7}x + y = \frac{3}{7} \right]$$

$$2x + 7y = 3$$

Standard $2x + 7y = 3$

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

$$3 \left[\frac{1}{3}x + y = 2 \right]$$

$$x + 3y = 6$$

Standard $x + 3y = 6$

Write each equation in slope intercept form

7. $5x - 3y = 9$

$$\frac{-3y}{-3} = \frac{-5x + 9}{-3}$$

$$y = \frac{5}{3}x - 3$$

Slope Int $y = \frac{5}{3}x - 3$

8. $2x + 5y = 8$

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

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

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

9. $3x - 4y = 11$

$$\frac{-4y}{-4} = \frac{-3x + 11}{-4}$$

$$y = \frac{3}{4}x - 2\frac{3}{4}$$

Slope Int $y = \frac{3}{4}x - 2\frac{3}{4}$

Write the slope, y intercept as an ordered pair, and x intercept as an **ordered pair**

10. $7x - 4y = 20$

$m = \frac{7}{4}$ y - int = $(0, -5)$ x - int = $(\frac{20}{7}, 0)$

$$y = \frac{7}{4}x - 5$$

11. $2x - 3y = 15$

$m = \frac{2}{3}$ y - int = $(0, -5)$ x - int = $(\frac{15}{2}, 0)$

$$y = \frac{2}{3}x - 5$$

12. $y = \frac{-4}{5}x + 3$

$m = \frac{-4}{5}$ y - int = $(0, 3)$ x - int = $(\frac{3}{4}, 0)$

$$4x + 5y = 15$$

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

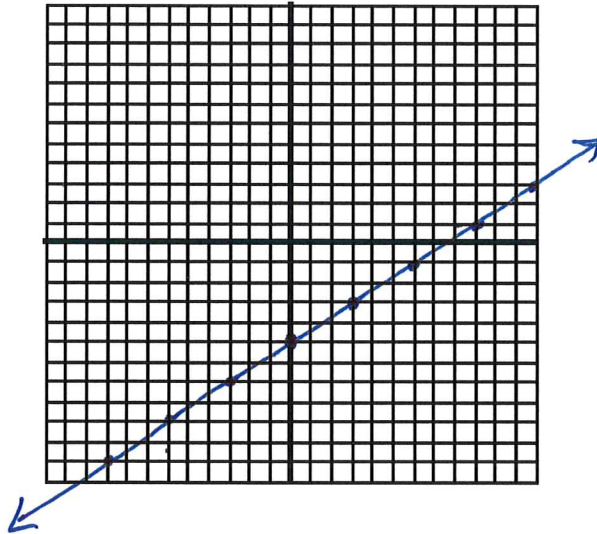
$m = \frac{3}{4}$ y - int = $(0, -\frac{1}{4})$ x - int = $(\frac{1}{3}, 0)$

$$3x - 4y = 1$$

Graph Each of the following. Write intercepts as ordered pairs and write out description of line.

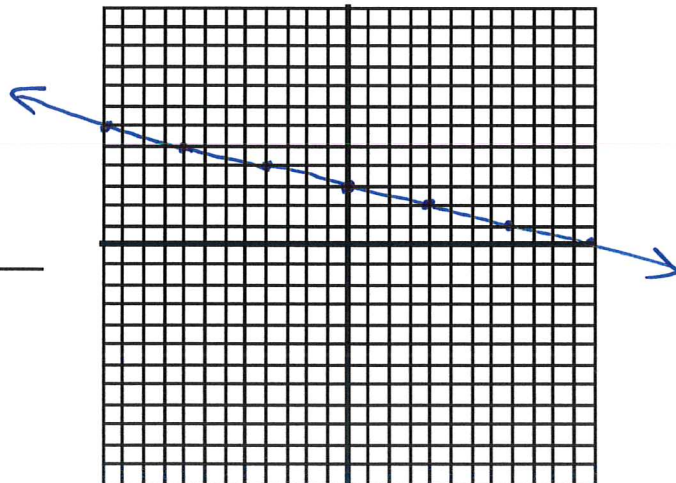
14. $y = \frac{2}{3}x - 5$ $m = \frac{2}{3}$ incline / decline INCLINE y - int = (0, -5)
steep / shallow SHALLOW

x	y
-6	-9
-3	-7
0	-5
3	-3
6	-1



15. $y = \frac{-1}{4}x + 3$ $m = -\frac{1}{4}$ incline / decline DECLINE y - int = (0, 3)
steep / shallow SHALLOW

x	y
-8	5
-4	4
0	3
4	2
8	1



Write the following equations.

18. Parallel to $y = \frac{2}{3}x - 12$ through $(-1, 4)$ in standard form.

$$m = 2/3$$

$$\left. \begin{array}{l} m_{||} = 2/3 \\ (-1, 4) \\ \text{STANDARD} \end{array} \right\} \begin{array}{l} y = 2/3x + C \\ -3[-2/3x + y = C] \\ 2x - 3y = C \\ 2[-1] - 3[4] = C \\ -14 = C \end{array}$$

18. $2x - 3y = -14$

19. Perpendicular to $y = \frac{-4}{5}x - 11\frac{2}{7}$ through $(8, -3)$ in standard form.

$$m = -4/5$$

$$\left. \begin{array}{l} m_{\perp} = 5/4 \\ (8, -3) \\ \text{STANDARD} \end{array} \right\} \begin{array}{l} y = 5/4x + C \\ -4[-5/4x + y = C] \\ 5x - 4y = C \\ 5[8] - 4[-3] = C \\ 40 + 12 = C \\ 52 = C \end{array}$$

19. $5x - 4y = 52$

20. Parallel to $y = \frac{-1}{4}x - 5\frac{4}{7}$ through $(-12, 5)$ in slope intercept form.

$$m = -1/4$$

$$\left. \begin{array}{l} m_{||} = -1/4 \\ (-12, 5) \\ \text{S.I.} \end{array} \right\} \begin{array}{l} y = -1/4x + C \\ 5 = -1/4(-12) + C \\ 5 = 3 + C \\ 2 = C \end{array}$$

20. $y = -1/4x + 2$

21. Perpendicular to $y = \frac{4}{3}x + 810$ through $(8, -1)$ in slope intercept form..

$$m = 4/3$$

$$\left. \begin{array}{l} m_{\perp} = -3/4 \\ (8, -1) \\ \text{S.I.} \end{array} \right\} \begin{array}{l} y = -3/4x + C \\ -1 = -3/4[8] + C \\ -1 = -6 + C \\ 5 = C \end{array}$$

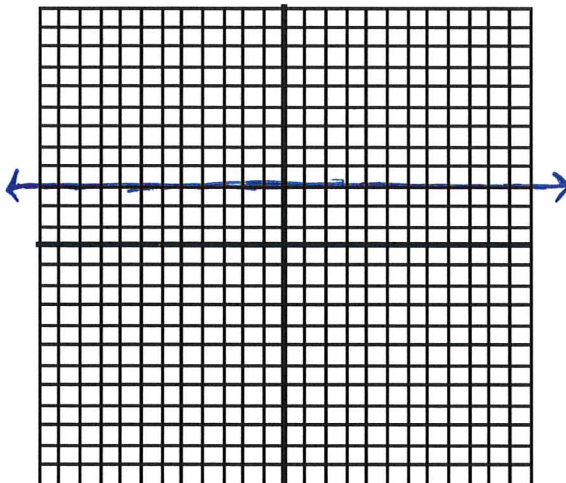
21. $y = -3/4x + 5$

22. $y = 3$

$m = 0$

describe the line HORIZONTAL

x	y
1	3
2	3
3	3
4	3
5	3

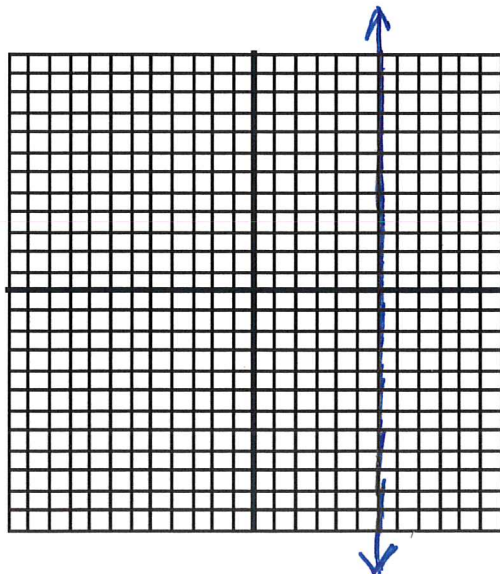


22. $x = 6$

$m = \text{UNDEFINED}$

describe the line VERTICAL

x	y
6	1
6	2
6	3
6	4
6	5

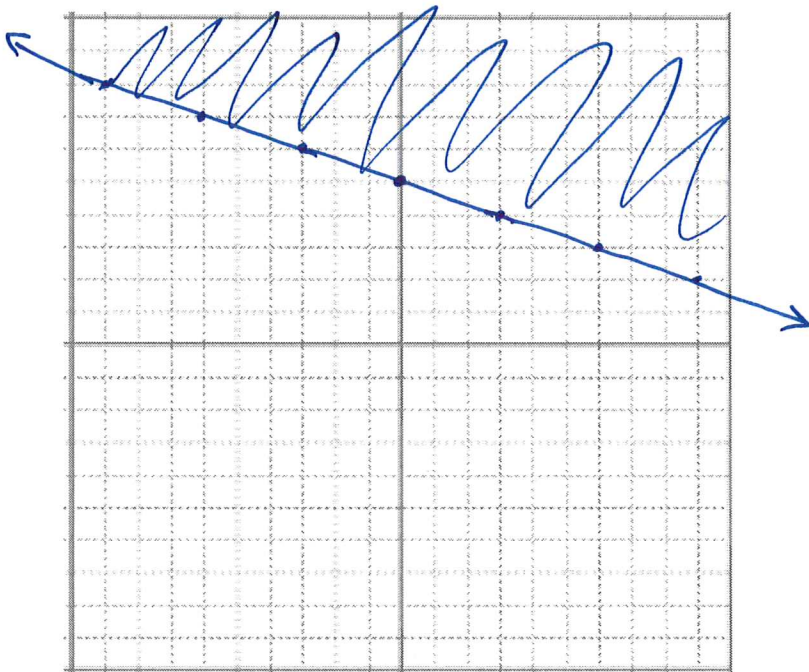


Graph The System of Inequalities

#23. $y \geq \frac{-1}{3}x + 5$

$m = -1/3$

$(0, 5)$



#24. $x - 5y < 10$

$\frac{-5y}{-5} < \frac{-x + 10}{-5}$

$y > \frac{1}{5}x - 2$



$m = 1/5$

$(0, -2)$

