

$$3x + y = 1$$

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

$$y = -3x + 1$$

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

$$y\text{-int} = 1$$

$$x - y = 3$$

$$\frac{-x \quad -x}{-x \quad -x}$$

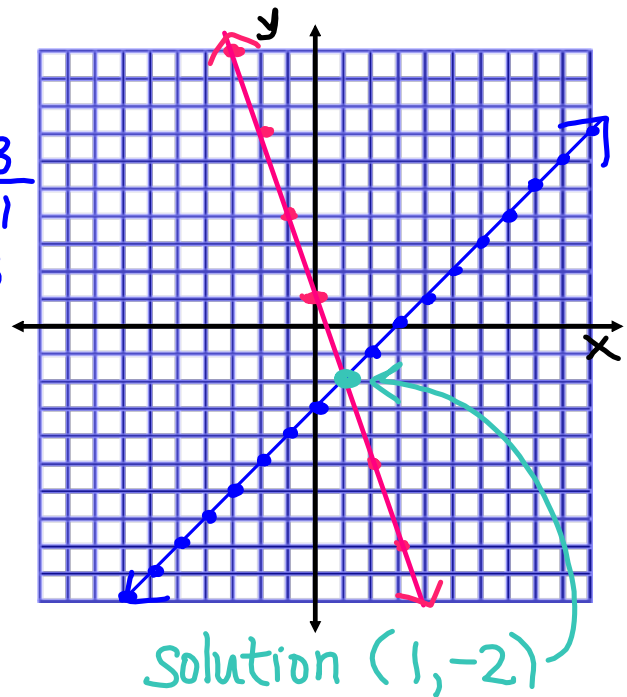
$$-y = -x + 3$$

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

$$y = x - 3$$

$$m = 1$$

$$y\text{-int} = -3$$



$$2x - 3y = 7$$

$$\frac{-2x \quad -2x}{-2x \quad -2x}$$

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

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

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

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

$$y\text{-int} = -\frac{7}{3}$$

or  
 $-2\frac{1}{3}$

$$3y = 7 + 2x$$

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

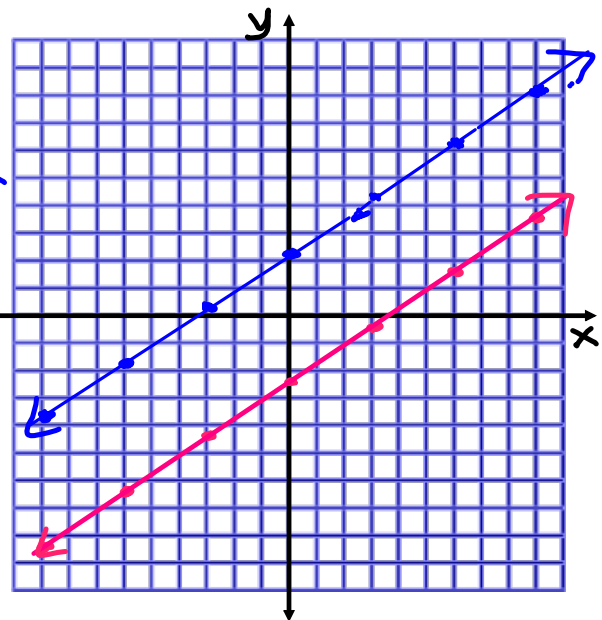
$$y = \frac{7}{3} + \frac{2}{3}x$$

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

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

$$y\text{-int} = \frac{7}{3}$$

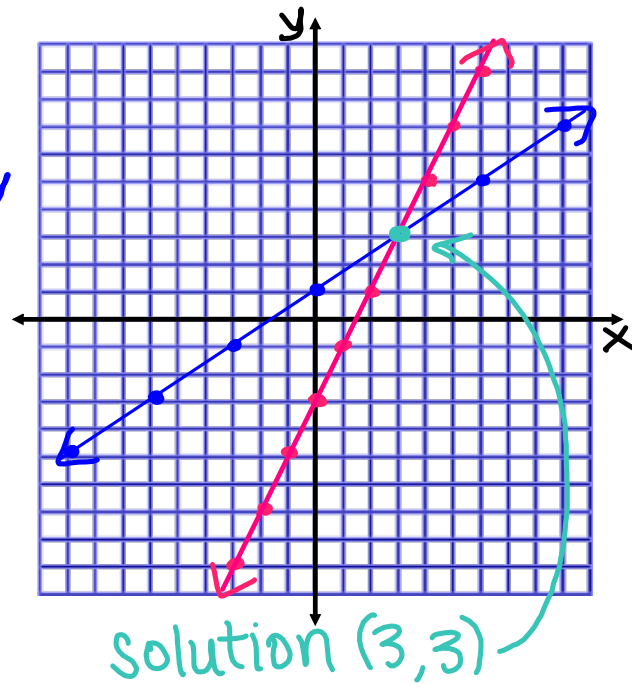
or  
 $2\frac{1}{3}$



no solution

$$\begin{array}{r}
 2x - y = 3 \\
 \underline{-2x \quad -2x} \\
 -y = -2x + 3 \\
 \underline{-1 \quad -1 \quad -1} \\
 y = 2x - 3 \\
 m = 2 \\
 y\text{-int} = -3
 \end{array}$$

$$\begin{array}{r}
 \frac{2}{3}x = y - 1 \\
 \underline{+1 \quad +1} \\
 \frac{2}{3}x + 1 = y \\
 m = \frac{2}{3} \\
 y\text{-int} = 1
 \end{array}$$



$$\begin{array}{r}
 \boxed{x} - 3y = -4 \\
 \underline{+3y \quad +3y} \\
 x = 3y - 4
 \end{array}$$

$$x = 3y - 4$$

$$x = 3\left(\frac{13}{12}\right) - 4$$

$$x = \frac{13}{4} - 4$$

$$x = \frac{13}{4} - \frac{16}{4}$$

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

$$\left(-\frac{3}{4}, \frac{13}{12}\right)$$

$$2x + 6y = 5$$

$$2(3y - 4) + 6y = 5$$

$$6y - 8 + 6y = 5$$

$$12y - 8 = 5$$

$$\underline{+8 \quad +8}$$

$$12y = 13$$

$$\underline{12 \quad 12}$$

$$y = \frac{13}{12}$$

$$\begin{array}{r}
 3x + 2y = 18 \\
 \underline{-3x} \quad \underline{-3x} \\
 2y = -3x + 18 \\
 \frac{2y}{2} = \frac{-3x + 18}{2} \\
 y = -\frac{3}{2}x + 9 \\
 y = -\frac{3}{2}(4) + 9 \\
 y = -6 + 9 \\
 y = 3
 \end{array}$$

$$\begin{array}{r}
 \frac{1}{4}x + \frac{2}{3}y = 3 \\
 \frac{1}{4}x + \frac{2}{3}\left(-\frac{3}{2}x + 9\right) = 3 \\
 \frac{1}{4}x - x + 6 = 3 \\
 -\frac{3}{4}x + 6 = 3 \\
 \underline{-6} \quad \underline{-6} \\
 -\frac{3}{4}x = -3 \\
 -\frac{4}{3} \cdot -\frac{3}{4}x = -3 \cdot -\frac{4}{3} \\
 x = 4
 \end{array}$$

(4, 3)

Neil's grade on the math test was thirty-one points less than twice Nellie's grade. If the sum of their grades was 161, find the grade of each person. Define variables, set up a system of equations, and use substitution to solve.

$$\begin{array}{r}
 x = 2y - 31 \\
 \underline{\hspace{2cm}} \quad \underline{\hspace{2cm}} \\
 x + y = 161
 \end{array}$$