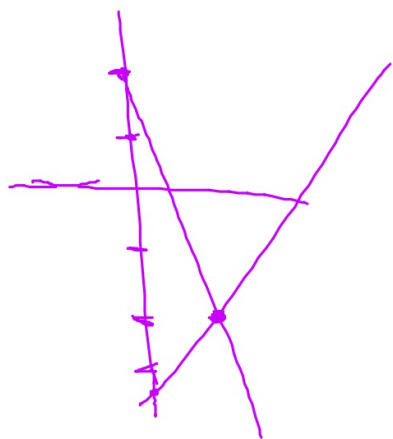


Solve for x & y

$$y = -x + 10$$

$$y = 2x - 17$$



$$\begin{array}{r} x + y = 10 \rightarrow 9 + y = 10 \\ + \quad 2x - y = 17 \\ \hline \end{array}$$

$$y = 10 - 9$$

$$y = 1$$

$$\frac{3x}{3} = \frac{27}{3}$$

$$(9, 1) \quad x = 9$$

$$2 \cdot 9 - y = 17$$

$$18 - y = 17$$

$$-y = -1$$

$$y = 1$$

Isolate
a variable

$$x - (2) = -4$$

$$x - y = -4 \rightarrow$$

$$x + 3y = 4$$

$$x - y = -4$$

$$+y \quad +y$$

$$\hline x = -4 + y$$

Solution

$$\begin{array}{r} x - 2 = -4 \\ +2 \quad +2 \\ \hline \end{array}$$

$$x = -2$$

$$(-2, 2)$$

Replace
for x

$$(9 - 1) - 6 = 2 - 6 = -4$$

$$(-4 + y) + 3y = 4$$

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

$$\begin{array}{r} -4 + 4y = 4 \\ +4 \quad \quad +4 \\ \hline \end{array}$$

$$4y = 8$$

$$\frac{4y}{4} = \frac{8}{4}$$

$$y = 2$$

Solving Systems of Linear Equations

Solve by substitution

Find the value of one variable and replace it in the 2nd equation.

$$\begin{array}{r} 5+y=12 \\ -5 \quad -5 \\ \hline y=7 \end{array}$$

$$\begin{array}{l} 5+y=12 \\ x+y=12 \longrightarrow \\ 2x+y=17 \end{array}$$

$$\begin{array}{l} 2x+(12-x)=17 \\ 2x+12-x=17 \\ x+12=17 \\ -12 \quad -12 \\ \hline x=5 \end{array}$$

Solve for y

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

Combine like terms

$$5, 7$$

Solving Systems of Linear Equations

Solve by addition and elimination

$$\begin{array}{r} x+y=15 \\ + 2x-y=9 \\ \hline 3x=24 \\ \frac{3}{3} \quad \frac{24}{3} \\ x=8 \end{array} \quad \rightarrow \quad \begin{array}{r} 8+y=15 \\ -8 \quad -8 \\ \hline y=7 \\ (8, 7) \end{array}$$

$$\begin{array}{r} x - y = 10 \\ 3x + y = 42 \\ \hline 4x = 52 \\ \hline 4 \quad 4 \\ \hline x = 13 \end{array}$$

$$\begin{array}{r} 13 - y = 10 \\ -13 \quad -13 \\ \hline -y = -3 \\ \hline \div -1 \quad \div -1 \\ \hline y = 3 \end{array}$$

Substitution

$$\begin{array}{l} 3x + 2y = 22 \\ x - y = -1 \end{array} \rightarrow \begin{array}{l} x - y = -1 \\ \quad +y \quad +y \end{array}$$

$$3(-1+y) + 2y = 22$$

$$x = -1 + y$$

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

$$x = 4 \quad (4, 5)$$

$$-3 + 3y + 2y = 22$$

$$\begin{array}{r} -3 + 5y = 22 \\ +3 \quad +3 \end{array}$$

$$\begin{array}{r} 5y = 25 \\ \hline 5 \quad 5 \\ \hline y = 5 \end{array}$$

$$y = 2x + 1$$

$$x + 2y = 20$$

$$x + 2(2x + 1) = 20$$

$$x + 4x + 2 = 20$$

$$\begin{array}{r} 5x + 2 = 20 \\ \underline{-2 \quad -2} \end{array}$$

$$5x = 18$$

$$\frac{5x}{5} = \frac{18}{5}$$

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

$$y = 2\left(\frac{18}{5}\right) + 1$$

$$y = \frac{36}{5} + 1$$

$$y = 7\frac{1}{5} + 1$$

$$y = 8\frac{1}{5}$$