

## Example 1

$$4x - 3y = -1 \quad \textcircled{1}$$

$$5x - 2y = 4 \quad \textcircled{2}$$

$$\textcircled{1} \times 2 \quad 8x - 6y = -2 \quad \textcircled{3}$$

$$\textcircled{2} \times 3 \quad 15x - 6y = 12 \quad \textcircled{4}$$

$$\textcircled{4} - \textcircled{3} \quad 7x = 14$$

$$x = \frac{14}{7}$$

$$\underline{x = 2}$$

Sub for  $x$  in  $\textcircled{2}$

$$5(2) - 2y = 4$$

$$10 - 2y = 4$$

$$-2y = 4 - 10$$

$$-2y = -6$$

$$y = \frac{-6}{-2}$$

$$\underline{y = 3}$$

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## Example 2

$$3x + 2y = 12 \quad \textcircled{1}$$

$$5x - 4y = -2 \quad \textcircled{2}$$

$$\textcircled{1} \times 2 \quad 6x + 4y = 24 \quad \textcircled{3}$$

$$\textcircled{2} + \textcircled{3} \quad 11x = 22$$

$$x = \frac{22}{11}$$

$$\underline{x = 2}$$

Sub for  $x$  in  $\textcircled{1}$

$$\begin{aligned} 3(2) + 2y &= 12 \\ 6 + 2y &= 12 \\ 2y &= 12 - 6 \\ \left\{ \begin{array}{l} x = 2 \\ y = 3 \end{array} \right. & \begin{aligned} 2y &= 6 \\ y &= \frac{6}{2} \\ \underline{y = 3} & \end{aligned} \end{aligned}$$


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### Example 3

$$\begin{aligned} 5x - 8y &= 2 & \textcircled{1} \\ 3x - 2y &= 4 & \textcircled{2} \\ \textcircled{2} \times 4 & \quad 12x - 8y = 16 & \textcircled{3} \end{aligned}$$

$$\begin{aligned} \textcircled{3} - \textcircled{1} & \quad 7x = 14 \\ x &= \frac{14}{7} \\ \underline{x = 2} & \end{aligned}$$

Sus for  $x$  in  $\textcircled{1}$

$$5(z) - 8y = 2$$

$$\begin{aligned}
 10 - 8y &= 2 \\
 -8y &= 2 - 10 \\
 -8y &= -8 \\
 y &= \frac{-8}{-8} \\
 y &= 1
 \end{aligned}$$


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### Exercise

1)  $\begin{array}{l} 2x - 4y = 6 \\ 3x - 2y = 13 \end{array}$   $x = 5$   $y = 1$

2)  ~~$\begin{array}{l} 3x + 5y = 2 \\ 2x - 10y = -12 \end{array}$~~

3)  $\begin{array}{l} 5x - y = 12 \\ 4x - 3y = 3 \end{array}$   $x = 3$   $y = 3$

4)  $\begin{array}{l} 3x + 5y = 22 \\ 2x - 10y = -12 \end{array}$   $x = 4$   $y = 3$

5)  $\begin{array}{l} 4x - 2y = 14 \\ 5x - 4y = 16 \end{array}$   $x = 4$   $y = 1$

$$6) \begin{array}{rcl} 4x + 3y & = & 22 \\ 2x - 2y & = & 4 \end{array}$$

$$x = 4$$

$$y = 2$$

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