

7.4 Solving Systems by Substitution

* **Important:** This method is most useful when the on any of the variables in the system equals

ex. Solve the following system algebraically:

$$\begin{cases} 2x + y = 3 & \textcircled{1} \\ 4x + 3y = 5 & \textcircled{2} \end{cases}$$

Step 1:

Step 2:

Step 3:

* It is never a bad idea to verify your solution in both equations.

Test the solution in equation $\textcircled{1}$ & $\textcircled{2}$

* **Note:** If none of the coefficients equals one this method still works, but it is not always the best option.

ex. Solve the following system algebraically:

$$\begin{cases} 2x + 3y = 6 & \textcircled{1} \\ 4x + 5y = 8 & \textcircled{2} \end{cases}$$

Step 1: Try to make a clever decision as to which variable to isolate. Sometimes it is impossible to avoid fractions.

Step 2:

Step 3:

ex. Solve the following system algebraically:

$$\begin{cases} \frac{1}{2}x + \frac{2}{3}y = -1 & \textcircled{1} \\ y = \frac{1}{4}x - \frac{5}{3} & \textcircled{2} \end{cases}$$

Step 1:

Step 2:

Step 3: