## 4.3 The Elimination or Addition Method

**Process - Elimination/Addition Method**

1. Rewrite both equations in standard form ($Ax + By = C$).
2. Multiply either or both equations by some constant in order to make either the coefficients of the $x$ or $y$ terms match.
3. Add or subtract the two equations as appropriate.
4. Solve the new one variable equation.
5. Substitute this value into either original equation to solve for the second missing value.
6. Rewrite your solution as a point.

**Example 4.3.1**
Solve the following with the elimination method:

$$\begin{cases} x + y = 5 \\ x - y = 9 \end{cases}$$

**Example 4.3.2**
Solve the following with the elimination method:

$$\begin{cases} 4x - y = 22 \\ 3x + 4y = 26 \end{cases}$$

**Example 4.3.3**
Solve the following with the elimination method:

$$\begin{cases} 4x + 5y = 3 \\ 2x - 3y = 7 \end{cases}$$

**Example 4.3.4**
Solve the following with the elimination method:

$$\begin{cases} 2x = 9 + 3y \\ 3x = 8 - 4y \end{cases}$$

**Example 4.3.5**
Solve the following with the elimination method:

$$\begin{cases} x + 2y = 4 \\ 3x + 6y = 13 \end{cases}$$

**Example 4.3.6**
Solve the following with the elimination method:

$$\begin{cases} x - 5y = 7 \\ 3x - 15y = 21 \end{cases}$$