ELIMINATION METHOD

EXAMPLE: Solve this system using the elimination method: $3x + 2y = 8$

$-x + 6y = 9$

1. Multiply the equations by a number that will allow both equations to have the opposite coefficient

$3x + 2y = 8$

$3(-x + 6y = 9)$

$3x + 2y = 8$

$-3x + 18y = 27$

2. Add the two equations

$$\begin{array}{r} 3x + 2y = 8 \\ + \\ -3x + 18y = 27 \\ \hline 0 + 20y = 35 \end{array}$$

3. Solve for the unknown

$20y = 35$

$\frac{20y}{20} = \frac{35}{20}$

$y = 1.75$

4. Replace y to get x in any of the two equations

$3x + 2(1.75) = 8$

$3x + 3.5 = 8$

$3x = 8 - 3.5$

$3x = 4.5$

$x = 1.5$

5. Write answer as point (x,y)

$(1.5, 1.75)$