

Solve each system of linear equations using the elimination method.

$1) \begin{aligned} -2(3x+3y=12) &\rightarrow -6x-6y=-24 \\ 6x+11y=14 &+ \quad 6x+11y=14 \\ \hline 5y &= -10 \\ y &= -2 \end{aligned}$ $\begin{aligned} 3x+3y &= 12 \\ 3x+3(-2) &= 12 \\ 3x-6 &= 12 \\ 3x &= 18 \\ x &= 6 \end{aligned}$ <p>Common solution (6, -2)</p>	$2) \begin{aligned} 2(3x+8y=17) & \quad 6x+16y=34 \\ 3(-2x+9y=3) & \quad -6x+27y=9 \\ \hline & 43y=43 \\ y &= 1 \end{aligned}$ <p>Common solution (3, 1)</p> <p>check</p> $\begin{aligned} 3x+8y &= 17 & -2x+9y &= 3 \\ 3(3)+8(1) &= 17 & -2(3)+9(1) &= 3 \\ 9+8 &= 17 & -6+9 &= 3 \\ 17 &= 17 & 3 &= 3 \\ \checkmark & & \checkmark & \end{aligned}$
---	---

* Use a linear system to solve each problem below. Use any algebraic method to solve.

- 3) Roses cost \$2.50 each and lilies cost \$1.75 each. Ellis spent \$24.75 for 12 of the flowers. How many of each type of flower did he buy?

Let x = number of roses = 5
Let y = number of lilies = 7

$$\begin{aligned} 2.5x + 1.75y &= 24.75 \rightarrow 2.5x + 1.75y = 24.75 \\ -2.5(x + y = 12) & \quad -2.5x - 2.5y = -30 \\ \hline & -0.75y = -5.25 \\ & y = 7 \end{aligned}$$

$$\begin{aligned} x + y &= 12 \\ x + 7 &= 12 \\ x &= 5 \end{aligned}$$



- 4) Bright Pools is building a rectangular pool at a new house. The perimeter of the pool has to be 94 feet, and the length has to be 2 feet more than twice the width. What will be the length and width of the pool?

$P=94$ x Let x = width
 y Let y = length

width : 15 feet
length : 32 feet

$$\begin{aligned} y &= 2x + 2 \\ 2x + 2y &= 94 \\ 2x + 2(2x+2) &= 94 \\ 2x + 4x + 4 &= 94 \\ 6x + 4 &= 94 \\ 6x &= 90 \\ x &= 15 \end{aligned}$$

$$\begin{aligned} y &= 2x + 2 \\ y &= 2(15) + 2 \\ y &= 30 + 2 \\ y &= 32 \end{aligned}$$