System of Equations (Elimination)

Each of the following systems has a solution. Determine the solution to the system by eliminating one of the variables.

1. $\begin{cases} 9x + 2y = 9 \\ -3x + y = 2 \end{cases}$

2. $\begin{cases} 8x + 5y = 19 \\ -8x + y = -1 \end{cases}$

System of Equations (Elimination)

Each of the following systems has a solution. Determine the solution to the system by eliminating one of the variables.

1. $\begin{cases} 9x + 2y = 9 \\ -3x + y = 2 \end{cases}$

$3(-3x + y = 2)$
$-9x + 3y = 6$
$\begin{cases} 9x + 2y = 9 \\ -9x + 3y = 6 \end{cases}$
$9x + 2y - 9x + 3y = 15$
$5y = 15y = 3$

$-3x + 3 = 2$
$-3x = -1$
$x = \dfrac{1}{3}$

The solution is $\left(\dfrac{1}{3}, 3\right)$.

2. $\begin{cases} 8x + 5y = 19 \\ -8x + y = -1 \end{cases}$

$8x + 5y - 8x + y = 19 - 1$
$5y + y = 18$
$6y = 18$
$y = 3$

$8x + 5(3) = 19$
$8x + 15 = 19$
$8x = 4$
$x = \dfrac{1}{2}$

The solution is $\left(\dfrac{1}{2}, 3\right)$.

Go to <u>onlinemathlearning.com</u> for more free math resources