

Solving Linear Systems by Substitution

Questions

1. Solve each system by substitution. Check solutions using “left-side / right-side”.

a)

$$\begin{aligned}2x + y &= 6 \\3x + 2y &= 10\end{aligned}$$

b)

$$\begin{aligned}x - 2y &= 4 \\2x - 3y &= 7\end{aligned}$$

2. Solve each system by substitution. Check final answers on the reverse side of this page.

a)

$$\begin{aligned}2x + 3y &= 6 \\x + y &= 3\end{aligned}$$

b)

$$\begin{aligned}2x - y &= 13 \\x + 2y &= -6\end{aligned}$$

c)

$$\begin{aligned}4x - y &= 3 \\6x - 2y &= 5\end{aligned}$$

d)

$$\begin{aligned}2x - 5y &= 12 \\x + 10y &= -9\end{aligned}$$

3. Complete the next three linear systems using either graphing or substitution (or both) for additional practice. Check final answers on the reverse side of this page.

a)

$$\begin{aligned}x - 4y &= 8 \\2x - 8y &= 8\end{aligned}$$

b)

$$\begin{aligned}2x - y &= 2 \\3x - 2y &= 3\end{aligned}$$

c)

$$\begin{aligned}x + y - 4 &= 0 \\2x &= 8 - 2y\end{aligned}$$

Answers

1. a) (2,2) b) (2, - 1)

2. a) (3,0) b) (4, - 5) c) $\left(\frac{1}{2}, - 1\right)$ d) $\left(3, -\frac{6}{5}\right)$

3. a) no solution b) (1,0) c) infinitely many solutions