

Unit 3.3 Solving systems using substitution Example

Solve each system by substitution.

1)
$$y = 3x + 13$$
$$y = x + 3$$

2)
$$y = 5x + 9$$
$$y = -3x - 7$$

3)
$$y = -2x - 9$$
$$y = 5x - 2$$

4)
$$y = -8x - 3$$
$$y = -2x + 3$$

5)
$$y = 3x + 5$$
$$-6x + 2y = 10$$

6)
$$y = 3x + 9$$
$$3x + 6y = 12$$

7)
$$4x + 3y = 3$$
$$y = 4x + 1$$

8)
$$y = -2x - 5$$
$$-6x + 3y = 9$$

$$\begin{aligned} 9) \quad & 6x + 4y = 18 \\ & x + 2y = -1 \end{aligned}$$

$$\begin{aligned} 10) \quad & x + 3y = 15 \\ & -4x - 6y = -18 \end{aligned}$$

$$\begin{aligned} 11) \quad & -x - 7y = -3 \\ & x + 7y = 7 \end{aligned}$$

$$\begin{aligned} 12) \quad & -6x - 2y = -24 \\ & -2x + y = 2 \end{aligned}$$

$$\begin{aligned} 13) \quad & -7x - 5y = -24 \\ & 3x - y = 4 \end{aligned}$$

$$\begin{aligned} 14) \quad & y = 1 \\ & -x + 7y = 0 \end{aligned}$$

$$\begin{aligned} 15) \quad & -2x + 3y = 1 \\ & 2x - 5y = 9 \end{aligned}$$

$$\begin{aligned} 16) \quad & -2x + 5y = -6 \\ & 3x + 6y = 9 \end{aligned}$$

Unit 3.3 Solving systems using substitution Example

Solve each system by substitution.

1) $y = 3x + 13$

$y = x + 3$

$(-5, -2)$

2) $y = 5x + 9$

$y = -3x - 7$

$(-2, -1)$

3) $y = -2x - 9$

$y = 5x - 2$

$(-1, -7)$

4) $y = -8x - 3$

$y = -2x + 3$

$(-1, 5)$

5) $y = 3x + 5$

$-6x + 2y = 10$

Infinite number of solutions

6) $y = 3x + 9$

$3x + 6y = 12$

$(-2, 3)$

7) $4x + 3y = 3$

$y = 4x + 1$

$(0, 1)$

8) $y = -2x - 5$

$-6x + 3y = 9$

$(-2, -1)$

$$\begin{aligned} 9) \quad & 6x + 4y = 18 \\ & x + 2y = -1 \end{aligned}$$

$$(5, -3)$$

$$\begin{aligned} 10) \quad & x + 3y = 15 \\ & -4x - 6y = -18 \end{aligned}$$

$$(-6, 7)$$

$$\begin{aligned} 11) \quad & -x - 7y = -3 \\ & x + 7y = 7 \end{aligned}$$

No solution

$$\begin{aligned} 12) \quad & -6x - 2y = -24 \\ & -2x + y = 2 \end{aligned}$$

$$(2, 6)$$

$$\begin{aligned} 13) \quad & -7x - 5y = -24 \\ & 3x - y = 4 \end{aligned}$$

$$(2, 2)$$

$$\begin{aligned} 14) \quad & y = 1 \\ & -x + 7y = 0 \end{aligned}$$

$$(7, 1)$$

$$\begin{aligned} 15) \quad & -2x + 3y = 1 \\ & 2x - 5y = 9 \end{aligned}$$

$$(-8, -5)$$

$$\begin{aligned} 16) \quad & -2x + 5y = -6 \\ & 3x + 6y = 9 \end{aligned}$$

$$(3, 0)$$