

**Unit 3.3 Solving systems using substitution Example****Solve each system by substitution.**

1) 
$$\begin{aligned}y &= 3x + 13 \\y &= x + 3\end{aligned}$$

2) 
$$\begin{aligned}y &= 5x + 9 \\y &= -3x - 7\end{aligned}$$

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

4) 
$$\begin{aligned}y &= -8x - 3 \\y &= -2x + 3\end{aligned}$$

5) 
$$\begin{aligned}y &= 3x + 5 \\-6x + 2y &= 10\end{aligned}$$

6) 
$$\begin{aligned}y &= 3x + 9 \\3x + 6y &= 12\end{aligned}$$

7) 
$$\begin{aligned}4x + 3y &= 3 \\y &= 4x + 1\end{aligned}$$

8) 
$$\begin{aligned}y &= -2x - 5 \\-6x + 3y &= 9\end{aligned}$$

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

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

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

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

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

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

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

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

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

$(-2, -1)$

$$\begin{aligned} 9) \quad & 6x + 4y = 18 \\ & x + 2y = -1 \\ & (5, -3) \end{aligned}$$

$$\begin{aligned} 10) \quad & x + 3y = 15 \\ & -4x - 6y = -18 \\ & (-6, 7) \end{aligned}$$

$$\begin{aligned} 11) \quad & -x - 7y = -3 \\ & x + 7y = 7 \\ & \text{No solution} \end{aligned}$$

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

$$\begin{aligned} 13) \quad & -7x - 5y = -24 \\ & 3x - y = 4 \\ & (2, 2) \end{aligned}$$

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

$$\begin{aligned} 15) \quad & -2x + 3y = 1 \\ & 2x - 5y = 9 \\ & (-8, -5) \end{aligned}$$

$$\begin{aligned} 16) \quad & -2x + 5y = -6 \\ & 3x + 6y = 9 \\ & (3, 0) \end{aligned}$$