

Name: _____

Solving Linear Systems by Substitution

Exercise 1: Use substitution to solve each system of equations.

1)
$$\begin{aligned} y &= x - 4 \\ 3x + 2y &= 2 \end{aligned}$$

2)
$$\begin{aligned} y &= 3x \\ 7x - y &= 16 \end{aligned}$$

3)
$$\begin{aligned} x &= 2y \\ 4x + 2y &= 15 \end{aligned}$$

4)
$$\begin{aligned} 3x - 7y &= 12 \\ x - 2y &= 4 \end{aligned}$$

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

6)
$$\begin{aligned} y &= x + 7 \\ x + y &= 1 \end{aligned}$$

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

8)
$$\begin{aligned} y &= 3x - 8 \\ 3x - y &= 12 \end{aligned}$$

9)
$$\begin{aligned} 4x - 3y &= -6 \\ x + 5y &= 10 \end{aligned}$$

10)
$$\begin{aligned} y &= 3x \\ x + 2y &= -21 \end{aligned}$$

11)
$$\begin{aligned} 4y &= -3x + 8 \\ 3x + 4y &= 6 \end{aligned}$$

12)
$$\begin{aligned} x - 3y &= 3 \\ 2x + 9y &= 11 \end{aligned}$$

13)
$$\begin{aligned} x &= 2y + 5 \\ 3x - 6y &= 15 \end{aligned}$$

14)
$$\begin{aligned} x + y &= 0 \\ 3x + 3y &= 15 \end{aligned}$$

15)
$$\begin{aligned} x - 3y &= 9 \\ 3x + 5y &= 7 \end{aligned}$$

16)
$$\begin{aligned} x - y &= 5 \\ 3x - y &= 4 \end{aligned}$$

17)
$$\begin{aligned} 4x - y &= -3 \\ y + 2 &= x \end{aligned}$$

18)
$$\begin{aligned} x - 6y &= 5 \\ 2x - 12y &= 10 \end{aligned}$$

Exercise 2: Use substitution to solve $2x - y = -4$ and $-3x + y = -9$.

Exercise 3: What is the solution of the system $x - 2y = 5$ and $3x - 5y = 8$?