

EXTRA PRACTICE 31
Solving Systems of Linear Equations
 Use after Sections 8.2 and 8.3

Name _____

Examples:

a) Solve using the substitution method: $5x - 2y = 4$,
 $y = 5 - x$.

Substitute $5 - x$ for y .

$$\begin{aligned} 5x - 2y &= 4 \\ 5x - 2(5 - x) &= 4 \\ 5x - 10 + 2x &= 4 \\ 7x &= 14 \\ x &= 2 \end{aligned}$$

Then substitute 2 for x and solve for y .

$$\begin{aligned} y &= 5 - x \\ y &= 5 - 2 \\ y &= 3 \\ \text{The solution is } &(2, 3). \end{aligned}$$

b) Solve using the elimination method: $2x + 7y = -1$,
 $-x - 2y = 2$.

Multiply the second equation by 2 and then add.

$$\begin{aligned} 2x + 7y &= -1 \\ -2x - 4y &= 4 \\ \hline 3y &= 3 \\ y &= 1 \end{aligned}$$

Then substitute 1 for y and solve for x .

$$\begin{aligned} 2x + 7y &= -1 \\ 2x + 7 \cdot 1 &= -1 \\ 2x + 7 &= -1 \\ 2x &= -8 \\ x &= -4 \end{aligned}$$

The solution is $(-4, 1)$.

Solve.

1. $4x + 3y = 1$,
 $x = 1 - y$ _____

2. $2x - y = 6$,
 $-x + y = -1$ _____

3. $6x - y = 3$,
 $4x - 2y = -2$ _____

4. $2x + 3y = 7$,
 $x = 1 - 4y$ _____

5. $2x + 3y = 6$,
 $x - 3y = -15$ _____

6. $7x - 5y = 4$,
 $y = 3x - 4$ _____

EXTRA PRACTICE 31 (continued)
Solving Systems of Linear Equations
Use after Sections 8.2 and 8.3

7. $2y - 5x = -1,$
 $x = 2y + 5$ _____

8. $4x + 3y = 1,$
 $3x + 5y = -13$ _____

9. $6x - 5y = 3,$
 $4x + 3y = 21$ _____

10. $x + y = 4,$
 $3x + 4y = 10$ _____

11. $-3x + y = 2,$
 $7x - 8y = 1$ _____

12. $7x + 2y = 2,$
 $x - 2y = 14$ _____

13. $9y - 2x = -7,$
 $x - 3y = 5$ _____

14. $3x - 5y = 8,$
 $4x - 7y = 12$ _____

15. $5x + 2y = 12,$
 $3x - 4y = 2$ _____

16. $x + 4y = 7,$
 $3x + 7y = 6$ _____

17. $5x - 8y = 25,$
 $-x + 4y = -7$ _____

18. $05x + 2y = 9,$
 $4x - 15y = 2$ _____

19. $8x - 6y = 0,$
 $x + 9y = \frac{13}{4}$ _____

20. $\frac{2}{3}x + \frac{1}{4}y = 18,$
 $\frac{1}{6}x - \frac{3}{8}y = -6$ _____