

7.2 EXERCISES

HOMWORK KEY

 = **WORKED-OUT SOLUTIONS**
on p. WS1 for Exs. 13 and 33

 = **TAKS PRACTICE AND REASONING**
Exs. 18, 33, 37, 39, and 40

SKILL PRACTICE

1. **VOCABULARY** Give an example of a system of linear equations.

2. **WRITING** If you are solving the linear system shown using the substitution method, which equation would you solve for which variable? Explain.

$$2x - 3y = 24 \quad \text{Equation 1}$$

$$2x + y = 8 \quad \text{Equation 2}$$

EXAMPLE 1

on p. 435
for Exs. 3–8

SOLVING LINEAR SYSTEMS Solve the linear system using substitution.

3. $x = 17 - 4y$
 $y = x - 2$

4. $y = 2x - 1$
 $2x + y = 3$

5. $x = y + 3$
 $2x - y = 5$

6. $4x - 7y = 10$
 $y = x - 7$

7. $x = 16 - 4y$
 $3x + 4y = 8$

8. $-5x + 3y = 51$
 $y = 10x - 8$

9. $2x = 12$
 $x - 5y = -29$

10. $2x - y = 23$
 $x - 9 = -1$

11. $x + y = 0$
 $x - 2y = 6$

12. $2x + y = 9$
 $4x - y = -15$

13. $5x + 2y = 9$
 $x + y = -3$

14. $5x + 4y = 32$
 $9x - y = 33$

15. $11x - 7y = -14$
 $x - 2y = -4$

16. $20x - 30y = -50$
 $x + 2y = 1$

17. $6x + y = 4$
 $x - 4y = 19$

18.  **TAKS REASONING** Which ordered pair is a solution of the linear system $4x - y = 17$ and $-9x + 8y = 2$?

(A) (6, 7)

(B) (7, 6)

(C) (7, 11)

(D) (11, 7)

19. **ERROR ANALYSIS** Describe and correct the error in solving the linear system $4x + 2y = 6$ and $3x + y = 9$.

Step 1

$$\begin{aligned} 3x + y &= 9 \\ y &= 9 - 3x \end{aligned}$$

Step 2

$$\begin{aligned} 4x + 2(9 - 3x) &= 6 \\ 4x + 18 - 6x &= 6 \\ -2x &= -12 \\ x &= 6 \end{aligned}$$

Step 3

$$\begin{aligned} y &= 9 - 3x \\ 6 &= 9 - 3x \\ -3 &= -3x \\ 1 &= x \end{aligned}$$

The solution is (6, 1).



SOLVING LINEAR SYSTEMS Solve the linear system using substitution.

20. $4.5x + 1.5y = 24$
 $x - y = 4$

21. $35x + y = 20$
 $1.5x - 0.1y = 18$

22. $3x - 2y = 8$
 $0.5x + y = 17$

23. $0.5x + 0.6y = 5.7$
 $2x - y = -1$

24. $x - 9 = 0.5y$
 $2.2x - 3.1y = -0.2$

25. $0.2x + y = -1.8$
 $1.8y + 5.5x = 27.6$

26. $\frac{1}{2}x + \frac{1}{4}y = 5$
 $x - \frac{1}{2}y = 1$

27. $x + \frac{1}{3}y = -2$
 $-8x - \frac{2}{3}y = 4$

28. $\frac{3}{8}x + \frac{3}{4}y = 12$
 $\frac{2}{3}x + \frac{1}{2}y = 13$