

7.3 EXERCISES

**HOMEWORK
KEY**

◆ = MULTIPLE CHOICE PRACTICE
Exs. 21, 31, 36, 45, and 54–56

○ = HINTS AND HOMEWORK HELP
for Exs. 13, 23, and 47 at classzone.com

SKILLS • PROBLEM SOLVING • REASONING

1. **VOCABULARY** Give an example of a linear system in two variables that can be solved by first adding the equations to eliminate one variable.

2. **WRITING** Explain how to solve the linear system shown using the elimination method.
- $$\begin{aligned} 2x - y &= 2 & \text{Equation 1} \\ 2x + 3y &= 22 & \text{Equation 2} \end{aligned}$$

EXAMPLE 1

on p. 391
for Exs. 3–11

USING ADDITION Solve the linear system using elimination.

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

4. $9x + y = 2$
 $-4x - y = -17$

5. $-3x - y = 8$
 $7x + y = -12$

6. $3x - y = 30$
 $-3x + 7y = 6$

7. $-9x + 4y = -17$
 $9x - 6y = 3$

8. $-3x - 5y = -7$
 $-4x + 5y = 14$

9. $2x + 5y = 31$
 $-2x + y = -1$

10. $-4x - 8y = -16$
 $6x + 8y = -8$

11. $3x + y = 10$
 $-3x - 4y = 23$

EXAMPLE 2

on p. 392
for Exs. 12–21

USING SUBTRACTION Solve the linear system using elimination.

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

13. $x - y = -4$
 $x + 3y = 4$

14. $2x - y = 7$
 $2x + 7y = 31$

15. $6x + y = -10$
 $5x + y = -10$

16. $5x + 6y = 50$
 $-x + 6y = 26$

17. $4x - 9y = -21$
 $4x + 3y = -9$

18. $x + 5y = 35$
 $-2x + 5y = -10$

19. $6x - y = -1$
 $6x - 3y = -27$

20. $4x - 7y = 39$
 $9x - 7y = 9$

21. ◆ **MULTIPLE CHOICE** What is the solution of the linear system $4x + 9y = -2$ and $11x + 9y = 26$?

(A) $(-2, 4)$

(B) $(2, -4)$

(C) $(4, -2)$

(D) $(4, 2)$

EXAMPLE 3

on p. 392
for Exs. 22–31

ARRANGING LIKE TERMS Solve the linear system using elimination.

22. $2x - y = 32$
 $y - 5x = 13$

23. $-8y + 6x = 36$
 $6x - y = 15$

24. $2x - y = -11$
 $y = -2x - 13$

25. $-x - y = 14$
 $x = 5y - 38$

26. $11y - 3x = 18$
 $-3x = -16y + 33$

27. $-5x + y = -23$
 $-y = 3x - 9$

28. $-2x = y - 9$
 $2x - 5y = 15$

29. $5y - 7x = -13$
 $-7x = -3y - 5$

30. $8x + 6y = -36$
 $9y = -8x - 66$

31. ◆ **MULTIPLE CHOICE** Which system of equations has the solution $(3, 1)$?

(A) $3x = 4 - y$
 $3x + 5y = 18$

(B) $2x + y = 6$
 $3y = 14 - 2x$

(C) $-12y = 16 - 7x$
 $5x + 12y = 32$

(D) $2x + 2y = 8$
 $x = 5 - 2y$