

Practice A

For use with pages 230–236

Write the linear system as a matrix equation.

1. $x - y = 3$
 $-2x + y = 4$
2. $3x - y = -1$
 $4x + y = 15$
3. $6x - 3y = 39$
 $5x + 9y = -25$
4. $x - y + z = -2$
 $2x + 3z = 4$
 $3y - z = 7$
5. $3x + y - 2z = 1$
 $x - 2y + z = 12$
 $x + 4y = -18$
6. $5x - 3y + z = 6$
 $2x + 2y + 3z = -1$
 $x - 5y - 4z = 9$
7. $2x - y + 3z = 4$
 $3x + y + 5z = 9$
 $2x + y - 4z = -1$
8. $5x + 3y + z = 6$
 $2x - 2y + 4z = 6$
 $3x + 2y - 4z = -1$
9. $5x - 3y + z = 3$
 $6x + y + z = 7$
 $3x - 5y - 3z = -5$

Use an inverse matrix to solve the linear system.

10. $x + y = 2$
 $2x + y = -1$
11. $3x - 2y = 8$
 $4x - 3y = 10$
12. $5x - 2y = -9$
 $-7x + 3y = 14$
13. $4x - 5y = -13$
 $-3x + 4y = 10$
14. $3x + 7y = 4$
 $x + 3y = 0$
15. $2x - y = 16$
 $6x + 2y = 78$
16. $5x - 3y = 7$
 $3x - 2y = 4$
17. $4x + y = 20$
 $7x + 2y = 35$
18. $x + 2y = 7$
 $2x + 3y = 11$

Write the linear system as a matrix equation. Then use the given inverse of the coefficient matrix to solve the linear system.

19. $2x + y - z = 3$
 $3x + z = -5$
 $5x + 2y - 2z = 5$
 $A^{-1} = \begin{bmatrix} -2 & 0 & 1 \\ 11 & 1 & -5 \\ 6 & 1 & -3 \end{bmatrix}$
20. $x + y - z = 2$
 $9x + 6y - 7z = 24$
 $-6x - 4y + 5z = -15$
 $A^{-1} = \begin{bmatrix} -2 & 1 & 1 \\ 3 & 1 & 2 \\ 0 & 2 & 3 \end{bmatrix}$
21. $x + y - 2z = -9$
 $2x + y + z = 0$
 $-x - 2y + 6z = 21$
 $A^{-1} = \begin{bmatrix} 8 & -2 & 3 \\ -13 & 4 & -5 \\ -3 & 1 & -1 \end{bmatrix}$

Stock Investment In Exercises 22–25, use the following information.

You have \$10,000 to invest in two types of stock. The expected annual returns for the stocks are shown in the table below. You want the overall annual return to be 8%.

<i>Investment</i>	<i>Expected return</i>
Stock A	10%
Stock B	6%

22. Write a linear system of equations that represents the given information.
23. Write the system as a matrix equation.
24. Use an inverse matrix to solve the system.
25. How much should you invest in each type of stock?