Name_____Class _____ Date_____

3-6 Practice

Form G

Solving Systems Using Matrices

Identify the indicated element.

$$A = \left[\begin{array}{cc|c} 3 & 5 & 8 \\ 4 & 1 & 6 \end{array}\right] \qquad B = \left[\begin{array}{ccc|c} 0 & 6 & 3 & 2 \\ 4 & 5 & 1 & 13 \\ 2 & 2 & 0 & -10 \end{array}\right]$$

1. A_{13} **2.** B_{24} **3.** B_{12} **4.** A_{22}

5. B_{31} **6.** A_{21} **7.** B_{23} **8.** A_{11}

Write a matrix to represent each system.

9. $\begin{cases} 3x + y = -4 \\ -2x + 4y = 7 \end{cases}$ **10.** $\begin{cases} 6x = 11 \\ -3x + 4y = 2 \end{cases}$ **11.** $\begin{cases} 4x - y + 2z = 10 \\ 5x + 2y - 3z = 0 \\ x - 3y + z = 6 \end{cases}$

Write the system of equations represented by each matrix.

12. $\left[\begin{array}{ccc|c} 2 & 5 & 0 & 13 \\ -3 & 1 & 2 & 6 \\ 4 & 0 & -3 & 5 \end{array}\right]$ **13.** $\left[\begin{array}{cc|c} 2 & 1 & -7 \\ 0 & 4 & 9 \end{array}\right]$ **14.** $\left[\begin{array}{ccc|c} 6 & 4 & -2 & 17 \\ 1 & -5 & 2 & -10 \\ 0 & 3 & -1 & 0 \end{array}\right]$

Solve the system of equations using a matrix.

15. $\begin{cases} 4x - y = 10 \\ -2x + 5y = 4 \end{cases}$ **16.** $\begin{cases} x - 2y + 3z = 18 \\ 9x + 2y - z = -2 \\ -6x - y + 2z = 4 \end{cases}$ **17.** $\begin{cases} 3x - 4y + z = 15 \\ -2x - 6y + 3z = 4 \\ 2x + 2y - 2z = -1 \end{cases}$

Name_____ Class _____ Date_____

3-6 Practice (continued) *Form G*

Solving Systems Using Matrices

Graphing Calculator Solve each system.

18. $\begin{cases} 4x + y - 2z = 3 \\ 2y + z = 4 \\ 3x - 3y - z = 9 \end{cases}$

19. $\begin{cases} 5x - 2y + z = -1 \\ -x - y - 2z = 5 \\ 3x + 2y + 2z = 2 \end{cases}$

20. $\begin{cases} 3x + 5z = -4 \\ -2x + y - 3z = 9 \\ -x - 2y + 9z = 0 \end{cases}$

21. Suppose the movie theater you work at sells popcorn in three different sizes. A small costs $2, a medium costs $5, and a large costs $10. On your shift, you sold 250 total containers of popcorn and brought in $1726. You sold twice as many large containers as small ones.

a. How many of each popcorn size did you sell?

b. How much money did you bring in from selling small size containers?