Name:_____

6.2 Matrices

Perform the row operations on the given matrix.

$$\left[\begin{array}{ccc|c} 3 & -3 & -1 & 6 \\ 8 & -5 & 5 & -1 \\ 0 & -6 & -9 & -3 \end{array}\right]$$

1. $R2 \leftrightarrow R3$

2. $\left(\frac{1}{3}\right) \cdot R1$

3. $R2 : (-1) \cdot R3 + R2$

Solve each system.

4) $-6x + y = 28$
$-z = 6$
$4x + 5y - 3z = 22$

5) $y = -1$
$4x + 2y - 3z = 27$
$-x - 6y + z = -2$

6) $z = 5x - 3y - 5$
$x = -y + 7$
$-6x + 5y + 3z = 9$

7) $x = 4y - 2z - 14$
$z = 6y - 14$
$6x + 6z = -24$

8) $-x + y + 2z = 5$
$-2x + 2y - 5z = 1$
$5x - 5y - 3z = -18$

9) $-5x + 6y + 6z = 16$
$4x + y + z = -7$
$4x - 3y - 3z = -11$

Name:_____

6.2 Matrices

10) $5x + 6y - 4z = -9$
$-6x + 6y + 6z = -12$
$5x - 5y - 5z = 30$

11) $x - 5y + 4z = -8$
$-6x + 5y + 6z = -7$
$-x + 2z = -3$

Find the inverse of the following matrices.

12) $\begin{bmatrix} -1 & -1 & -1 \\ 4 & 5 & 0 \\ 0 & 1 & -3 \end{bmatrix}$

13) $\begin{bmatrix} 1 & -1 & 1 \\ 0 & -2 & 1 \\ -2 & -3 & 0 \end{bmatrix}$

14) $\begin{bmatrix} 1 & 2 & -1 \\ 2 & -1 & 3 \\ -1 & 0 & 1 \end{bmatrix}$

15) $\begin{bmatrix} 2 & 3 & -1 \\ -1 & 0 & 4 \\ 0 & 1 & 1 \end{bmatrix}$

Solve using the inverse matrix.

16) $2x + 6y + 6z = 8$
$2x + 7y + 6z = 10$
$2x + 7y + 7z = 9$

17) $x + 2y + 5z = 2$
$2x + 3y + 8z = 3$
$-x + y + 2z = 3$

18) $x - 6y + 3z = 11$
$2x - 7y + 3z = 14$
$4x - 12y + 5z = 25$

19) $x - y + z = -6$
$4x + 2y + z = 9$
$4x - 2y + z = -3$