

12.3 Corrective Assignment - Inverse Matrices

Find the inverse of each matrix. (SHOW WORK!)

$$1) \begin{bmatrix} -5 & -3 \\ 5 & 2 \end{bmatrix}$$

$$2) \begin{bmatrix} -5 & -9 \\ 2 & 3 \end{bmatrix}$$

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

$$4) \begin{bmatrix} 7 & -2 \\ 5 & -2 \end{bmatrix}$$

Solve each equation. You can use a graphing calculator.

$$5) \begin{bmatrix} -1 & -1 \\ -1 & 2 \end{bmatrix} Z = \begin{bmatrix} 3 & -4 \\ 9 & -13 \end{bmatrix}$$

$$6) \begin{bmatrix} -16 & 4 \\ 4 & -1 \end{bmatrix} = \begin{bmatrix} -4 & -4 \\ -1 & 0 \end{bmatrix} X$$

$$7) \begin{bmatrix} 4 & -2 \\ -3 & 4 \end{bmatrix} A = \begin{bmatrix} -16 & 36 \\ -8 & -37 \end{bmatrix}$$

$$8) \begin{bmatrix} -1 & -1 \\ -6 & -5 \end{bmatrix} B = \begin{bmatrix} 5 & 1 \\ 30 & 1 \end{bmatrix}$$

Solve each system using matrices. Show the setup, then use a graphing calculator.

$$9) \begin{aligned} -7y - 4z &= -10 \\ -5x + 8y + 2z &= -39 \\ 5x - y - 5z &= 7 \end{aligned}$$

$$10) \begin{aligned} -8r + 8s + t &= -16 \\ r - 4s &= -20 \\ 8r + 3t &= 40 \end{aligned}$$

$$11) \begin{aligned} a - 6b - c &= -9 \\ -8b + c &= -30 \\ -5b - 3c &= 3 \end{aligned}$$

$$12) \begin{aligned} y &= -5z - 35 \\ -7x - 8y - 2z &= 7 \\ z &= -6x - 1 \end{aligned}$$

Answers to 12.3 Corrective Assignment - Inverse Matrices (ID: 1)

1) $\begin{bmatrix} \frac{2}{5} & \frac{3}{5} \\ -1 & -1 \end{bmatrix}$

2) $\begin{bmatrix} 1 & 3 \\ -\frac{2}{3} & -\frac{5}{3} \end{bmatrix}$

3) $\begin{bmatrix} -\frac{1}{3} & -\frac{1}{3} \\ \frac{2}{3} & \frac{1}{3} \\ -\frac{8}{3} & \frac{7}{3} \end{bmatrix}$

4) $\begin{bmatrix} \frac{1}{2} & -\frac{1}{2} \\ \frac{5}{4} & -\frac{7}{4} \\ -5 & 4 \end{bmatrix}$

5) $\begin{bmatrix} -5 & 7 \\ 2 & -3 \end{bmatrix}$

6) $\begin{bmatrix} -4 & 1 \\ 8 & -2 \end{bmatrix}$

7) $\begin{bmatrix} -8 & 7 \\ -8 & -4 \end{bmatrix}$

8) $\begin{bmatrix} -5 & 4 \\ 0 & -5 \end{bmatrix}$

9) $(7, -2, 6)$

10) $(8, 7, -8)$

11) $(3, 3, -6)$

12) $(1, 0, -7)$