

Exercises on Matrices and Linear Equations

Find the solutions of the following equations (i) by reducing the equations (ii) By writing the augmented matrix then by reducing the augmented matrix.

1.

$$\begin{aligned}x + y + z &= 1 \\x - y - z &= 2 \\x + 2y - z &= 10\end{aligned}\quad 9.$$

2.

$$\begin{aligned}x + 2y + 3z &= 4 \\x - 3y - 4z &= 6 \\x + 4y - 4z &= 0\end{aligned}\quad 10.$$

3.

$$\begin{aligned}2x + 4y + z &= 1 \\3x - z &= 2 \\-x + y + z &= -1\end{aligned}\quad 11.$$

4.

$$\begin{aligned}5x + 5y + 5z &= 2 \\2x - 2y - 7z &= -8 \\x - y - 12z &= 3\end{aligned}\quad 12.$$

5.

$$\begin{aligned}-2x + 3y - z &= 6 \\11x + 2y + 6z &= -3 \\8x + y - 9z &= 10\end{aligned}$$

6.

$$\begin{aligned}4x + 5y - 3z &= 1 \\-3x - 2y + z &= 2 \\x - 10y - 7z &= -10\end{aligned}\quad 13.$$

7.

$$\begin{aligned}2x + 5y - 7z &= 11 \\3x - 8y &= 2 \\x - z &= 4\end{aligned}\quad 14.$$

8.

$$\begin{aligned}7x &= -7 \\2x + 4y - 5z &= 21 \\-y + z &= 16\end{aligned}\quad 15.$$

$$\begin{aligned}2x - 5y + z &= -8 \\x - y - z &= -4 \\x + 12y - 6z &= -3\end{aligned}$$

$$\begin{aligned}4x - 2y - 5z &= 4 \\x - z &= -6 \\3x + y + z &= 4\end{aligned}$$

$$\begin{aligned}-x + 9y - z &= -13 \\-x + 2y - 5z &= 3 \\-x + y - 5z &= 11\end{aligned}$$

$$\begin{aligned}x + 2y - z &= -17 \\x - y - z &= 3 \\-3x - 2y + z &= 2\end{aligned}$$

$$\begin{aligned}4x + y - z &= -1 \\7x - y + 5z &= 2 \\x + y - 3z &= -4\end{aligned}$$

$$\begin{aligned}x + y &= 2 \\2x + 3y - 7z &= 0 \\-5x - y + 9z &= 0\end{aligned}$$

$$\begin{aligned}x - 5y + 7z &= 3 \\x + 8y - 9z &= -4 \\3x - 4y - 3z &= 17\end{aligned}$$