Applications of Gaussian Elimination Questions

Q1

Gaussian elimination: Do e.r.o.s on the following matrices to reduce them to row echelon form or reduced row echelon form.

1. Give the row echelon form of

$$G = \begin{bmatrix} 2 & 4 & 6 \\ 1 & 3 & 5 \\ 3 & 7 & 9 \end{bmatrix}.$$

2. Give the row echelon form of

$$G = \begin{bmatrix} 0 & 2 & 1 & 3 \\ 1 & 1 & 2 & 4 \\ 2 & 3 & -1 & 5 \end{bmatrix}.$$

3. Give the row echelon form of

$$G = \begin{bmatrix} 1 & 2 & 1 & 0 \\ 0 & 0 & 0 & 0 \\ 1 & 0 & 2 & 1 \\ 1 & 5 & 1 & 1 \end{bmatrix}.$$

4. Give the row echelon form of

$$G = \begin{bmatrix} 1 & 1 & 1 \\ 2 & 2 & 2 \\ 3 & 3 & 3 \end{bmatrix}.$$

5. Give the row echelon form of

$$G = \begin{bmatrix} 2 & 5 \\ 3 & 7 \end{bmatrix}.$$

6. Give the row echelon form of

$$G = \begin{bmatrix} 1 & 0 & 2 \\ 0 & 1 & -1 \\ 2 & -1 & 3 \\ 3 & 1 & 0 \end{bmatrix}.$$

7. Give the reduced row echelon form of

$$G = \begin{bmatrix} 1 & 2 & -1 \\ 2 & -1 & 1 \\ 3 & 0 & 2 \end{bmatrix}.$$

8. Give the reduced row echelon form of

$$G = \begin{bmatrix} 1 & 2 & 3 & 4 \\ 2 & 4 & 6 & 8 \\ 3 & 6 & 9 & 12 \end{bmatrix}.$$

9. Give the reduced row echelon form of

$$G = \begin{bmatrix} 1 & 2 & 5 \\ 3 & 4 & 11 \end{bmatrix}.$$

10. Give the reduced row echelon form of

$$G = \begin{bmatrix} 2 & 1 & 0 \\ 1 & 2 & 1 \\ 0 & 1 & 2 \end{bmatrix}.$$

11. Give the reduced row echelon form of

$$G = \begin{bmatrix} 0 & 6 & 0 & 3 \\ 2 & 1 & 2 & 1 \\ 0 & 2 & 0 & 1 \\ 1 & 2 & 0 & 0 \end{bmatrix}.$$

12. Give the reduced row echelon form of

$$G = \begin{bmatrix} 1 & -1 & 2 & 3 \\ 2 & -2 & 4 & 6 \\ 3 & -3 & 6 & 9 \end{bmatrix}.$$