

Gaussian Elimination and RREF

Row-reduce each augmented matrix to RREF, classify the system, and give its exact solution or parametric form.

1. Row-reduce the augmented matrix $[[1,1,0|-1],[2,3,2|5],[1,-1,1|5]]$. Classify and solve the system.

2. Row-reduce the augmented matrix $[[1,2,2|8],[0,1,-1|4],[1,0,4|0]]$. Classify and solve the system.

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3. Row-reduce the augmented matrix $\begin{bmatrix} 1 & -1 & 1 & 4 \\ 0 & 1 & 1 & 4 \\ -2 & 1 & -3 & -10 \end{bmatrix}$. Classify and solve the system.

4. Row-reduce the augmented matrix $\begin{bmatrix} 1 & -1 & 0 & -1 \\ 2 & -1 & 1 & 3 \\ 1 & 1 & 1 & 7 \end{bmatrix}$. Classify and solve the system.

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5. Row-reduce the augmented matrix $\begin{bmatrix} 1 & -2 & 1 & 6 \\ 0 & 1 & -2 & -3 \\ 2 & -2 & -2 & 6 \end{bmatrix}$. Classify and solve the system.

6. Row-reduce the augmented matrix $\begin{bmatrix} 1 & 2 & -1 & 9 \\ 0 & 1 & -2 & 10 \\ -1 & 0 & -3 & 13 \end{bmatrix}$. Classify and solve the system.