

RH 1.2

MATH 5, Jones

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3,7,14,21,24,35,37

3: Convert matrix to RREF

$$\left[\begin{array}{ccc|c} 1 & 2 & 3 & 4 \\ 4 & 5 & 6 & 7 \\ 6 & 7 & 8 & 9 \end{array} \right] \text{ Subtract } 4R_1 \text{ from } R_2 \text{ and } 6R_1 \text{ from } R_3 \rightarrow \left[\begin{array}{ccc|c} 1 & 2 & 3 & 4 \\ 0 & -3 & -6 & -9 \\ 0 & -5 & -10 & -15 \end{array} \right]$$

$$\text{Scale } R_2 \text{ by } -\frac{1}{3} \text{ and } R_3 \text{ by } -\frac{1}{5} \rightarrow \left[\begin{array}{ccc|c} 1 & 2 & 3 & 4 \\ 0 & 1 & 2 & 3 \\ 0 & 1 & 2 & 3 \end{array} \right]$$

$$\text{Subtract } R_2 \text{ from } R_3 \rightarrow \left[\begin{array}{ccc|c} 1 & 2 & 3 & 4 \\ 0 & 1 & 2 & 3 \\ 0 & 0 & 0 & 0 \end{array} \right]$$

$$\text{Subtract } 2R_2 \text{ from } R_1 \rightarrow \boxed{\left[\begin{array}{ccc|c} 1 & 0 & -1 & -2 \\ 0 & 1 & 2 & 3 \\ 0 & 0 & 0 & 0 \end{array} \right]} \text{ is the resultant matrix in RREF}$$

7: Find the general solution to the system

14

21

24

35

37