

$$x_1 + x_2 + 2x_3 = 9$$

$$2x_1 + 4x_2 - 3x_3 = 1$$

$$3x_1 + 6x_2 - 5x_3 = 0$$

$$\left[\begin{array}{ccc|c} 1 & 1 & 2 & 9 \\ 2 & 4 & -3 & 1 \\ 3 & 6 & -5 & 0 \end{array} \right]$$

$$\begin{array}{l} -2R_1 + R_2 \rightarrow R_2 \\ -3R_1 + R_3 \rightarrow R_3 \end{array}$$

$$\left[\begin{array}{ccc|c} 1 & 1 & 2 & 9 \\ 0 & 2 & -7 & -17 \\ 0 & 3 & -11 & -27 \end{array} \right]$$

$$\left[\begin{array}{ccc|c} 1 & 1 & 2 & 9 \\ 0 & 2 & -7 & -17 \\ 0 & 3 & -11 & -27 \end{array} \right]$$

$$\begin{array}{l} -\frac{1}{2}R_2 + R_1 \rightarrow R_1 \\ -\frac{3}{2}R_2 + R_3 \rightarrow R_3 \end{array}$$

$$\left[\begin{array}{ccc|c} 1 & 0 & \frac{11}{2} & 3\frac{5}{2} \\ 0 & 2 & -7 & -17 \\ 0 & 0 & -\frac{1}{2} & -\frac{3}{2} \end{array} \right]$$

$$\left[\begin{array}{ccc|c} 1 & 0 & \frac{11}{2} & 3\frac{5}{2} \\ 0 & 2 & -7 & -17 \\ 0 & 0 & -\frac{1}{2} & -\frac{3}{2} \end{array} \right]$$

$$-2R_3 \rightarrow R_3$$

$$\left[\begin{array}{ccc|c} 1 & 0 & \frac{11}{2} & 3\frac{5}{2} \\ 0 & 2 & -7 & -17 \\ 0 & 0 & 1 & 3 \end{array} \right]$$

$$\left[\begin{array}{ccc|c} 1 & 0 & \frac{11}{2} & 3\frac{5}{2} \\ 0 & 2 & -7 & -17 \\ 0 & 0 & 1 & 3 \end{array} \right]$$

$$\begin{array}{l} -\frac{11}{2}R_3 + R_1 \rightarrow R_1 \\ 7R_3 + R_2 \rightarrow R_2 \end{array}$$

$$\left[\begin{array}{ccc|c} 1 & 0 & 0 & 1 \\ 0 & 2 & 0 & 4 \\ 0 & 0 & 1 & 3 \end{array} \right]$$

$$\left[\begin{array}{ccc|c} 1 & 0 & 0 & 1 \\ 0 & 2 & 0 & 4 \\ 0 & 0 & 1 & 3 \end{array} \right]$$

$$\frac{1}{2}R_2 \rightarrow R_2$$

$$\left[\begin{array}{ccc|c} 1 & 0 & 0 & 1 \\ 0 & 1 & 0 & 2 \\ 0 & 0 & 1 & 3 \end{array} \right]$$

$$x_1 = 1$$

$$x_2 = 2$$

$$x_3 = 3$$