

Subjective part

Q.2

$$2x_1 + 2x_2 + 2x_3 = 0$$

$$-2x_1 + 5x_2 + 2x_3 = 1$$

$$8x_1 + x_2 + 4x_3 = -1$$

The Augment of the matrix

$$= \left[\begin{array}{ccc|c} 2 & 2 & 2 & 0 \\ -2 & 5 & 2 & 1 \\ 8 & 1 & 4 & -1 \end{array} \right]$$

$$R_1/2 \rightarrow R_1$$

$$= \left[\begin{array}{ccc|c} 1 & 1 & 1 & 0 \\ -2 & 5 & 2 & 1 \\ 8 & 1 & 4 & -1 \end{array} \right]$$

$$2R_1 + R_2 \rightarrow R_2$$

$$= \left[\begin{array}{ccc|c} 1 & 1 & 1 & 0 \\ 0 & 7 & 4 & 1 \\ 8 & 1 & 4 & -1 \end{array} \right]$$

$$R_3 - 8R_1 \rightarrow R_3$$

$$= \left[\begin{array}{ccc|c} 1 & 1 & 1 & 0 \\ 0 & 7 & 4 & 1 \\ 0 & -7 & -4 & -1 \end{array} \right]$$

$$R_2 \leftrightarrow R_1 \rightarrow R_2 \quad R_2 \times \frac{1}{7}$$

$$= \left[\begin{array}{ccc|c} 1 & 1 & 1 & 0 \\ 0 & 0 & -3 & 1 \\ 0 & -7 & -4 & -1 \end{array} \right]$$

$$= \left[\begin{array}{ccc|c} 1 & 1 & 1 & 0 \\ 0 & 1 & 4/7 & 1/7 \\ 0 & -7 & -4 & -1 \end{array} \right]$$

$$R_1 - R_2 \rightarrow R_1$$

$$= \left[\begin{array}{ccc|c} 1 & 0 & 1-4/7 & 0 \\ 0 & 1 & 4/7 & 1/7 \\ 0 & -7 & -4 & -1 \end{array} \right]$$

$$= \left[\begin{array}{ccc|c} 1 & 0 & 3/7 & 0 \\ 0 & 1 & 4/7 & 1/7 \\ 0 & -7 & -4 & -1 \end{array} \right]$$

$$R_3 + 7R_2 \rightarrow R_3$$

Date: _____

Day: _____

$$\begin{array}{ccc|c}
 1 & 0 & 3/7 & 0 \\
 0 & 1 & 4/7 & 1/7 \\
 0 & 0 & 4-4 & -1 + 1(1/7)
 \end{array}$$

$$\begin{array}{ccc|c}
 1 & 0 & 3/7 & 0 \\
 0 & 1 & 4/7 & 1/7 \\
 0 & 0 & 0 & 0
 \end{array}$$