Q1, Pt. 6

determinant = 3

$2x_1 - x_2 = 1$

$x_1 + x_2 = 2$

$$\begin{bmatrix} 2 & -1 & 1 \\ 1 & 1 & 2 \end{bmatrix}$$

$1 + -\frac{1}{2}(2)$

$r_2 + r_1(-\frac{1}{2}) \Rightarrow \quad 0 \quad 1.5 \quad 1.5$

$$\Rightarrow \begin{bmatrix} 2 & -1 & 1 \\ 0 & 1.5 & 1.5 \end{bmatrix} \Rightarrow \begin{matrix} 2x_1 - x_2 = 1 \\ 1.5x_2 = 1.5 \end{matrix}$$

$x_2 = 1$ ✓

$x_1 = 1$

Q2, Pt. 6

$$\begin{matrix} r_1 \\ r_2 \end{matrix} \begin{bmatrix} 0.5 & -1 & -0.5 \\ 1 & -2.01 & -1.01 \end{bmatrix}$$

$r_{2,1} + r_{1,1}(-2) = 0 \Rightarrow 1 + 0.5(-2) = 0$

$$\Rightarrow \begin{bmatrix} 0.5 & -1 & -0.5 \\ 0 & 0.01 & 0.01 \end{bmatrix} \quad \begin{matrix} 0.5x_1 - x_2 = -0.5 \\ 0.01x_2 = 0.01 \end{matrix}$$

$x_2 = 1$ ✓

$x_1 = 1$