Quiz 3

1 (25 pts)

Reduce the matrix into echelon form $\begin{bmatrix} 1 & 3 & -1 & 1 \\ 3 & 10 & 5 & 1 \\ 1 & 2 & -a^2 & a \end{bmatrix}$

2 (25 pts)

Let A be the 3×3 matrix of coefficients of the system $Ax = b$, Given that the reduced row echelon form of the augmented matrix $(A|b)$ is equal to $\begin{bmatrix} 1 & 0 & 1 & 1 \\ 0 & 1 & -2 & 1 \\ 0 & 0 & 0 & 0 \end{bmatrix}$. We can say that the solution set of the system $Ax = b$ is given by

(a) $\{(2-t, 2t, t), t \in R\}$

(b) $\{(1-t, 1+2t, t), t \in R\}$

(c) $\{(1-t, 1+2t, -t), t \in R\}$

(d) $\{(1, 1, 0)\}$

(e) $\{(1+t, 2+3t, t+1), t \in R\}$