Name:_____QUIZ NO:6 Section 5 ID_____Points:10

Q1. The eigenvalues of the matrix $A=\begin{pmatrix} 0 & 0 & 1 \\ -5 & -1 & -5 \\ 4 & 1 & -2 \end{pmatrix}$ are $\lambda_1=-1;\lambda_2=-1$ and $\lambda_3=-1$.

(a): Find the eigenspace of A associated with the repeated eigenvalue. (4 points)

(b): Solve the system $X'=\begin{pmatrix} 0 & 0 & 1 \\ -5 & -1 & -5 \\ 4 & 1 & -2 \end{pmatrix}X$ (4 points)

(c): Find the Jordan normal form for the matrix $A=\begin{pmatrix} 0 & 0 & 1 \\ -5 & -1 & -5 \\ 4 & 1 & -2 \end{pmatrix}$ (2 points)