Name:_____QUIZ NO:3 Section 5 ID_____Points:10

Q1. Find rank of the matrix $\begin{pmatrix} 1 & 2 & 3 \\ 1 & 5 & -9 \\ 2 & 5 & 2 \end{pmatrix}$

Q2. Find a basis of the subspace of $\Re^4$ for which the set of vectors (a,b,c,d) are related by $a = 3c$ and $b = 4d$

Q3. Vectors $\{v_i\}$ are known to be linearly independent. Show that $\underline{u}_1 = \underline{v}_1, \underline{u}_2 = \underline{v}_1 + 2\underline{v}_2,$ and $\underline{u}_3 = \underline{v}_1 + 2\underline{v}_2 + 3\underline{v}_3$ are also linearly independent.

Q4. Solve the IVP: $2\frac{dy}{dx}+\frac{2}{x}y=\frac{e^x}{2x} \quad y(1)=2$