Exam 3

Linear Algebra, Dave Bayer, 10:10 AM, April 16, 2013

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[1]	[2]	[3]	[4]	[5]	Total

   If you need more that one page for a problem, clearly indicate on each page where to look next for your work.

[1] Compute the determinant of the matrix

$$
A \;=\; \begin{bmatrix} 0 & 3 & 2 & 0 \\ 3 & 6 & 9 & 2 \\ 2 & 9 & 6 & 3 \\ 0 & 2 & 3 & 0 \end{bmatrix}
$$

[2] Find w/z where

$$\begin{bmatrix} a & b & c & d \\ 1 & 1 & 5 & 1 \\ 1 & 0 & 1 & 1 \\ 3 & 0 & 0 & 2 \end{bmatrix} \begin{bmatrix} w \\ x \\ y \\ z \end{bmatrix} = \begin{bmatrix} 1 \\ 0 \\ 0 \\ 0 \end{bmatrix}$$

[3] Compute A^n for the matrix

$$A = \begin{bmatrix} -1 & 2 \\ 5 & 2 \end{bmatrix}$$

[4] Find the eigenvalues and corresponding eigenvectors of the matrix

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

[5] Compute A^n for the matrix

$$A = \begin{bmatrix} 4 & -4 & 4 \\ 2 & -2 & 3 \\ 0 & 0 & 1 \end{bmatrix}$$