Homework 1

Linear Algebra, Dave Bayer, due January 28, 2014

Name: _____ **Uni:** _____

[1]	[2]	[3]	**Total**

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

[1] Using matrix multiplication, count the number of paths of length ten from x to y.
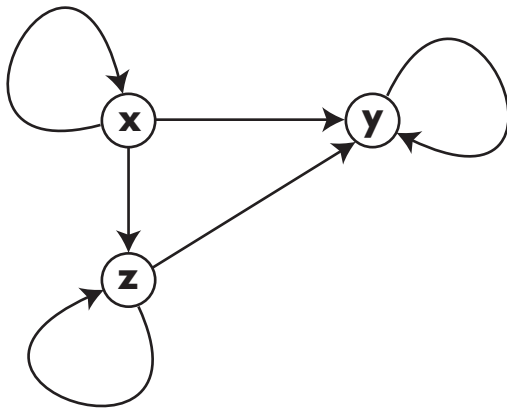
[2] Solve the following system of equations.

$$\begin{bmatrix} 2 & -1 & 0 & 0 \\ -1 & 2 & -1 & 0 \\ 0 & -1 & 2 & -1 \\ 0 & 0 & -1 & 2 \end{bmatrix} \begin{bmatrix} w \\ x \\ y \\ z \end{bmatrix} = \begin{bmatrix} 0 \\ 0 \\ 0 \\ 5 \end{bmatrix}$$

[3] Solve the following system of equations.

$$\begin{bmatrix} 1 & 0 & 1 & 1 \\ 2 & 0 & 0 & 3 \\ 3 & 0 & 1 & 4 \end{bmatrix} \begin{bmatrix} w \\ x \\ y \\ z \end{bmatrix} = \begin{bmatrix} 2 \\ 2 \\ 4 \end{bmatrix}$$