Math 309 Quiz 2

November 24, 2015

Problem 1. Write down the definition of the dimension of a vector space.

Problem 2. Write down the definition of a generalized eigenvector.

Problem 3. Find a matrix P and a matrix J with P invertible and J in Jordan normal form satisfying $P^{-1}AP = J$, for A the matrix

$$A = \begin{pmatrix} 0 & -1 \\ 1 & -2 \end{pmatrix}.$$

Problem 4. Calculate e^{At} for the matrix A of the previous problem.