

2014-FALL LINEAR ALGEBRA-GRADUATION

- (1) (5) Evaluate the determinant of

$$A = \begin{pmatrix} 1 & -1 & 2 & -1 \\ -3 & 4 & 1 & -1 \\ 2 & -5 & -3 & 8 \\ -2 & 6 & -4 & 1 \end{pmatrix}$$

- (2) (5) Find eigenvalues and their corresponding eigenvectors of

$$A = \begin{pmatrix} 0 & 0 \\ 0 & 0 \end{pmatrix}$$

- (3) (10) Prove If 3 by 3 matrix A has three distinct eigenvalues, then A has to be diagonalizable.