MATH 335 Quiz 3 Name: .
Fall 16

Show all work. 5 points each.

1. (2.8 #23)Find a basis for the Col(A)and Nul(A) if (you may use Matlab to reduce further)

$$A = \begin{bmatrix} 4 & 5 & 9 & -2 \\ 6 & 5 & 1 & 12 \\ 3 & 4 & 8 & -3 \end{bmatrix} \sim \begin{bmatrix} 1 & 2 & 6 & -5 \\ 0 & 1 & 5 & -6 \\ 0 & 0 & 0 & 0 \end{bmatrix}.$$

2. (5.2#5)Find the characteristic polynomial and the eigenvectors of B. (You may check with Matlab but show how they are obtained by hand.)

$$B = \begin{bmatrix} 2 & 1 \\ -1 & 4 \end{bmatrix}.$$

Extra Credit what is the dimension of each eigenspace? Justify.