

# Quiz 6

Student ID Number:

Name \_\_\_\_\_

Math 3A, 8 AM

Please justify all your answers

November 29, 2018

Please also write your full name on the back

1. Find a basis for the eigenspace corresponding to the eigenvalue  $\lambda = 3$  where  $A$  is given by

$$A = \begin{bmatrix} 4 & 0 & -1 \\ 3 & 0 & 3 \\ 2 & -2 & 5 \end{bmatrix}.$$

2. True or False? Explain.

(a) If  $A$  is an  $n \times n$  matrix with rank less than  $n$  then 0 is an eigenvalue of  $A$ .

(b) The sum of two eigenvectors of a matrix is another eigenvector.