Attendance Quiz for Lecture 17

NAME: (print!) _____ **Section:** _____

E-MAIL ADDRESS: (print!) _____

1. A matrix and a vector are given. Show that the vector is an eigenvector of the matrix, and determine the corresponding eigenvalue.

$$A = \begin{bmatrix} -9 & -8 & 5 \\ 7 & 6 & -5 \\ -6 & -6 & 4 \end{bmatrix} \quad , \quad \begin{bmatrix} 3 \\ -2 \\ 1 \end{bmatrix} \quad .$$

2. Below a matrix and a scalar λ are given. Show that λ is an eignenvalue of the matrix and determine a basis for its eigenspace.

$$A = \begin{bmatrix} -11 & 14 \\ -7 & 10 \end{bmatrix} \quad , \quad \lambda = -4 \quad .$$