MATH 132, WINTER 2021, QUIZ 1

Directions: The answers to this quiz are to be submitted to the instructor of your discussion section by **11:59 P.M.** on **Monday, February 1**. Please include your name, student identification number, and discussion section number on the worked out quiz.

If an upper triangular matrix has distinct diagonal entries, then we know that the eigenvalues of the matrix are given by the set of diagonal entries. Find a basis of eigenvalues for the matrix given as follows: Take the last four digits **ABCD** of your student identification number, and consider the upper triangular 3 by 3 matrix whose entries are given as below:

-1	**A**	**B**
0	**C**	**D**
0	**0**	**-2**

For each eigenvalue, the associated eigenvectors are scalar multiples of a matrix with integral entries. In each case ***find such an eigenvector***; recall that if we find eigenvectors with rational coordinates, we can convert them to eigenectors with integral coordinates by taking a suitable integral multiple.

You may use a calculator or simple programmable device to do elementary arithmetic calculations. Any valid approach to finding the answers is acceptable (but you may be asked to justify a procedure if it is nonstandard). Although you may consult with other students about material related this problem, the quiz is **NOT** collaborative; the answers you submit must be your own work and no one else's.