

Math 311 Hwk 2

Show your work. Always provide both code and output.

Problem 1 (25 points). *The following is an IEEE representation (in Hex) of a certain double-precision arithmetic problem. Re-write it decimal form.*

$$4016333333333333 + c037666666666666 = c031d9999999999a.$$

Problem 2 (25 points). *Write a function to determine if a given matrix is diagonally dominant. Call the function `isDiagDom`. Have the function return a 1 if the matrix is diagonally dominant and 0 if it is not.*

Problem 3 (50 points). *Write a Matlab function that row-reduces any given $m \times n$ matrix A into its LU-decomposition (without pivoting). You can either use the Type III elementary matrix function that we wrote in class, or you can write a more efficient row operation function. Verify your answer by multiplying L and U back together and comparing with A .*