EE 289 – Homework Chapter 3

1 For these exercises, do not use the direct entry method to construct the vectors. Write a script that does the following:
   a. Construct a vector containing all of the even number between 6 and 33, inclusive of the end points. Store your answer in the variable evens. (Note: 33 is not an even number)
   b. Construct a vector, threes, containing every third number starting with 8 and ending at 38
   c. Construct a vector, reverse, containing number starting at 20 and counting backward by 1 to 10
   d. Construct a vector, theta, containing 100 evenly spaced values between 0 and 2π
   e. Construct a vector, myZeros, containing 15 elements, all of which are zeros
   f. Construct a vector, random, containing 15 randomly generated numbers between 1 and 12

4 Write a script that, when given a vector of numbers, nums, creates a vector newNums containing every other element of the original vector, starting with the first element. For example, if nums=[6 3 56 7 8 9 445 6 7 437 357 5 4 3], newNums should be [6 56 8 445 7 357 4]. Note: You must not simply hard-code the numbers into your answer; your script should work with any vector of numbers.

5 You are given a vector, tests, of the test scores and which to normalize these scores by computing a new vector, normTests, that will contain the test scores on linear scale from 0 to 100. A zero still corresponds to a zero and the highest test score will correspond to 100. For example, it tests=[90 45 76 21 85 97 91 84 79 67 76 72 89 95 55], normTests should be

[92.78 46.39 78.35 21.65 87.63 100 93.81 86.6 81.44 69.07 78.35 74.23 91.75 97.94 56.7]

6 Write a script that takes a vector of numbers, A, and return a new vector, B, containing the cubes of the positive numbers in A. If a particular entry is negative, replace its cube with 0. For example, if A=[1 2 -1 5 6 7 -4 3 -2 0], B should be [1 8 0 125 216 343 0 27 0 0].