Homework #8

- Textbook:
  - Due: 2.2.24, 2.2.28, 2.3.13, 2.4.3, 2.5.9, 2.6.6, 2.6.13.
  - Not due: 2.5.7, 2.5.12

- Programming:

  1. Write a function in Matlab that takes as input $s$ and a number $x$ and outputs the floating point number of $x$ using $s$-digit rounding. You may use Matlab’s “round” command to help you. Use only basic programming.
     
     (a) Write out or print out your function.
     
     (b) Modify the function in HW #0, problem 2 so that it performs its arithmetic operations under $s$-digit rounding: $x + y$ is actually $fl(fl(x) + fl(y))$. Write out or print out your function.
     
     (c) Choose 2 random vectors of length 10, using the “rand” command, and compute the result of the dot product using your function under 4-digit rounding and compute the exact Matlab result and compute the absolute error. Do the same thing 4 more times and turn in the results.