

CHE 205
Homework Set 3
Due: Sept 17, 2015

To complete this homework assignment, turn in a m-file containing the MATLAB code that you generate in response to each problem.

1. Write a script that plots $\exp(x)$ for values of x ranging from -2 to 2 in steps of 0.1. The plot should have an appropriate title and labeled axes.
2. If a certain amount of money (called the principal P) is invested in a bank account, earning an interest rate i compounded annually, the total amount of money T_n that will be in the account after n years is given by:

$$T_n = P(1 + i)^n$$

Write a function that will receive input arguments for P , i , and n , and will return the total amount of money T_n . Write a script that calls this function to plot T_n after 20 years as a function of interest rate, with interest rate ranging from 0 to 10% in increments of 0.1%.

3. Write a script that creates a file called *testtan.mat* comprised of two lines with three real numbers on each line (some negative, some positive, in the range of -1 to 3). Write a second script that loads the file into a matrix and computes the tangent of every element in the matrix.
4. Write a script that will continue prompting the user for positive numbers, and storing them in a vector variable, until the user types in a negative number. Upon the user typing in a negative number, the stored vector should be saved to a file and the program should terminate.