Class Assignments – 5

1. Define a random product of 9 between 1 and 10,000, and show that the sum of its digit is a product of 9.
2. Write a script that asks the user for an answer and inputs the answer to the variable “F’. Try to answer with different variables types (number, string, array, expression, function), check the variable type in your workspace.
3. Write a script that asks the user for the current date: day, month (in txt) and a year and display it on the CW.
4. Write a script that creates a password as follows:
   a. asks for a user’s name (any name)
   b. sorts the name’s characters (alphabetically)
   c. Adds up the sorted string and it’s length separated by ‘_’.
   For example:
   For the name “debca” the script returns the password “abcde_5”
5. Generate a 3X5 matrix with random integers in the range of -20 to 10. Display the matrix size in the CW.

6. Generate a 4X5 matrix with random numbers in the range of 6 to 10. Find elements with the minimum, maximum and average values. The result will be presented as in a table as follows:

Min	Max	Mean

7.

The velocity, v, and the distance, d, as a function of time, of a car that accelerates from rest at constant acceleration, a, are given by:

$$v(t) = at \quad \text{and} \quad d(t) = \frac{1}{2}at^2$$

Determine v and d as every second for the first 10 seconds for a car with acceleration of $a = 1.55$ m/s^2. Display the results in a three-column table in which the first column is time (s), the second distance (m), and the third is velocity (km/h). In your code, use input command to define a.

8.

Plot the function $f(x) = \dfrac{x^2 - x + 1}{x^2 + x + 1}$ for $-10 \le x \le 10$.