Class_assignment -7

1. Write a user defined function that calculates the area and the perimeter of a circle with radius r.

2. Chap6 -2

Write a user-defined MATLAB function for the following math function:

$$y(x) = 0.9x^4 - 12x^2 - 5x$$

The input to the function is x and the output is y. Write the function such that x can be a vector.

a) Use the function to calculate $y(-3)$, and $y(5)$.

b) Use the function to make a plot of the function $y(x)$ for $-4 \le x \le 4$.

3. Write a user defined function that for any given array that returns the number of lines, the mean of the array elements and the number of columns.

4. Chap 6 – Ex-1

Write a user defined functions that convert a person height and weight in SI system (cm and kg) to ST system (inches and pounds) and the opposite (inch and pounds to cm and kg).

The two input arguments are height in cm and weight in Kg, and the two output arguments are the height in inches and mass in pound (lb). For the function's name and arguments use [in,lb]=SI2ST(cm,kg) and [cm,kg]=ST2SI(in,lb). Add help comments to your function.

Note:

$H[in] = H[cm] * 0.394$

$W[lb] = W[Kg] / 0.454$

a. Determine in ST units the height and weight of a person whose 180cm tall and with weight of 75kg
b. Determine your own height and weight in ST units.

5. Chap 6 – Ex-5.

When n electrical resistors are connected in parallel, their equivalent resistance R_{Eq} can be determined from:

$$\frac{1}{R_{Eq}} = \frac{1}{R_1} + \frac{1}{R_2} + \ldots + \frac{1}{R_n}$$

Use MATLAB inline command to define a function that calculates the equivalent resistance R_{EQ}. The input to the function is a vector

in which each element is a resistor value, and the output from the function is R_{Eq}. Use the function to calculate the equivalent resistance when the following resistors are connected in parallel: 50Ω, 75Ω, 300Ω, 60Ω, 500Ω, 180Ω, and 200Ω.

6. Moshe Brand>HW>24

Write a function *"like_mean"* that calculates the mean value of any given array (a matrix or a vector) and displays it on the CW. **Do not use MATLAB build-in function "mean".**

7. Write a user defined function that calculate the sum and product of 3 numbers and displays it on the CW.

8. Write a user defined function that zeros the main diagonal of a given matrix.