Sheet #1

1. Write a program that declares a structure time to store hours, minutes and seconds, and has a function to set a time, a function to display a time, and a function to increment the time by a number of seconds.

2. Write a program that reads two positive integer numbers x, n, and has functions calculate the sum of the following series:

a) $x + \frac{x+2}{2!} + \frac{x+3}{3!} + \cdots + \frac{x+n}{n!}$

b) $x - \frac{x^2}{1+2} + \frac{x^3}{1+2+3} - \cdots \frac{x^n}{1+2+\cdots+n}$

3. Write a program that reads an integer array of size n, and a character s, and has a function receives an integer array, its size, and a character. This function returns the sum of positive numbers stores in array for character +, or returns the sum of negative numbers for a character -.

4. Write a program that has a function to reads n positive integer numbers in array, a function check if an integer is a prime number or not, and a function count all primes numbers in an array.

5. Write a program reads that has a function to read a two dimensional array(matrix) of size n, a function to return the average of even numbers in a matrix, a function returns a maximum number in a matrix, and a function to display a matrix.

6. Write a program computes the following function by using recursive function:

$$\frac{k!}{n-k! * n!} \quad n>k$$