Homework 1

**Please do not use loop, if/else, and array in this Homework.**

1. Write a program that does the following:
   1. Prompts the user to input five floating-point numbers (real numbers).
   2. Prints the five floating-point numbers.
   3. Adds the five floating-point numbers.
   4. Prints the sum and average of the five floating-point numbers.

Case I: Complete the program by using any number of variables.

Case II: Complete the program just by using two variables

Input/Output Example:

Case I:

Please enter five real numbers: 1.1 2.2 3.3 4.4 5.5

The five real numbers are:

1.100000 2.200000 3.300000 4.400000 5.500000

Sum=16.500000

Average=3.300000

Case II:

Please enter five real numbers: 1.1 2.2 3.3 4.4 5.5

The five real numbers are:

1.100000 2.200000 3.300000 4.400000 5.500000

Sum=16.500000

Average=3.300000

1. Write a program that reads in a temperature in degrees Fahrenheit and prints the corresponding temperature in degrees Celsius. The conversion formula is

C = (F-32)

Please follow the operand order in the above equation to implement

your code.

If you write this program carelessly, the answer always comes out 0.

What bug causes this result? Describe and print out your answer in the

last line of the output.

Input/Output Example:

Program to convert Fahrenheit to Celsius.

Fahrenheit temperature? 212

Celsius equivalent: 100.000000

The bug comes from …

1. If a five-digit number is input through the keyboard:

(a). Write a program to calculate the sum of its digits.

(b). Write a program to print a new number by adding one to each of

its digits. For example, if the input number 12391, then the output

should be displayed as 23502.

Input/Output Example:

Input a five-digit number

=> 12345

\*\*\*(a)\*\*\*

Sum of digits of 12345 = 1+2+3+4+5 = 15

\*\*\*(b)\*\*\*

Adding one to each of its digits of 12345 = 23456

1. Write a program that allows the user to enter a length of time in seconds. The program should then output the number of hours, minutes, and seconds that corresponds to that number of seconds.

Input/Output Example:

Time conversion:

Input time in seconds: 50390

The conversion result of 50390 seconds is

Hours: 13

Minutes: 59

Seconds: 50

1. Write a program to evaluate the polynomial:

*f(*x) =  + 5 + 10*x* + 15

Read the data for the x from the keyboard and output the value of *f(*x)

Input/Output Example:

Please input one real number and calculate the corresponding polynomial:f(x) = x^3 + 5x^2 + 10x + 15

Input one real number: 6.78

The real number is 6.780000 and f(6.780000) = 624.307800

1. A Fibonacci number is a member of a set in which each number is the sum of the previous two numbers. (The Fibonacci series describes a form of a spiral. ) The series begins:

0, 1, 1, 2, 3, 5, 8, 13, 21, …

Write a program that calculate and prints the first 10 Fibonacci numbers

in the Fibonacci series. You are to use only three variables: fib1, fib2, and fib3.

Input/Output Example:

The first 15 Fibonacci numbers:

0 1 1 2 3 5 8 13 21 34