

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

1. Write a program that does the following:
  - a. **Prompts the user** to input **five** floating-point numbers (real numbers).
  - b. **Prints** the five floating-point numbers.
  - c. **Adds** the five floating-point numbers.
  - d. 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

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

$$C = \frac{5}{9}(F-32)$$

**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 ...

3. 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

4. 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

5. Write a program to evaluate the polynomial:

$$f(x) = x^3 + 5x^2 + 10x + 15$$

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

### Input/Output Example:

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Input one real numbers
Calculate the corresponding polynomial:  $f(x) = x^3 + 5x^2 + 10x + 15$ 
Input: 6.78
Input is 6.780000 and  $f(6.780000) = 624.307752$ 
```

6. 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