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

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

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

   The following is a sample run of the program

   ┌───┐
   │ Program to convert Fahrenheit to Celsius.   │
   │ Fahrenheit temperature?   212   │
   │ Celsius equivalent: 100   │
   │   │
   └───┘

   If you write this program carelessly, the answer always comes out 0.
   What bug causes this result?

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.

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.
   For example, if the user inputs 50390 total seconds then the program
   should output 13 hours, 59 minutes, an 50 seconds.

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)

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

7. 輸入:32 枚外觀看起來都相同的硬幣, 其中一枚是偽幣而且其重量與其他 31 枚不同(輕與重都有可能);
   輸出: 找出這枚偽幣並且決定它是比真幣輕或重;

   Note 1: 唯一能使用的工具是一支天秤
    Note 2: 只能使用 5 次天秤就必需找出偽幣並且決定它是比真幣輕或重
   Note3: 若你沒有程式設計基礎, 你只要寫出解決的方法.
        若你有程式設計基礎, 請寫出程式.

   7.(加分題, 可以不寫) This is an extra point question, you may not write.

   Among the 32 coins with the same appearance, there is one counterfeit.
   Its weight is different from the other 31 coins.(Lighter or heavier is possible);
   The only tool to identify the counterfeit is one scale(天平);
   Please describe one algorithm (method) to identify the counterfeit and
   decide whether it is lighter or heavier than the normal one.
   Use the scale(天平) at most five times to find out the counterfeit