C201 Homework 7

Submission: Print the source code and bring it to class

Problem 1. Write a program that asks the user to enter 10 integer numbers. These 10 input numbers could be duplicated. The program will count and display the unique non-zero numbers. You are required to use the containers and iterators defined in the standard template libraries.

One example of running this program is given below:

```
please enter an integer number: 5
please enter an integer number: 0
please enter an integer number: 4
please enter an integer number: 0
please enter an integer number: 3
please enter an integer number: 5
please enter an integer number: 12
please enter an integer number: -11
please enter an integer number: 12
please enter an integer number: 4
The total unique non-zero numbers you entered is 5
They are:
-11 3 4 5 12
```

The executable is at
http://www.cs.iusb.edu/~yul/C201/source/hw7/problem1.ex

Problem 2. Write a template function that returns the largest value of three parameters. The function should operate with any numeric data types (e.g., float, int, double, and char).

The draft of the program is at http://www.cs.iusb.edu/C201/source/hw7/problem2.cpp

Problem 3. Write a recursive function that takes one parameter n (n>0) of type int and returns the n
th Fibonacci number. Example of Fibonacci numbers: F(1) is 1, F(2), is 2, F(3) is 3, F(4) is 5, and in general

\[
F(i) = \begin{cases} 
  i & i = 1, 2 \\
  F(i - 1) + F(i - 2) & i \geq 3
\end{cases}
\]

The draft of the program is at http://www.cs.iusb.edu/~yul/C201/source/hw7/problem3.cpp