Four problems, 25 points each

Problem 1

The Triangle Inequality Theorem states that the sum of any two sides is greater than the other side.

Write a Triangle class that has

- a constructor that takes the values of three sides as it's parameters, checks if the triangular inequality theorem is satisfied and assigns the values to the class variables. If the triangular inequality is not satisfied, the constructor throws an exception.
- a toString() method that returns the three sides of the triangle.

The main method should create a triangle object and handle the exception by displaying an appropriate message.

Problem 2

Write a program to create a text file called in.txt on your Desktop if it does not already exist. Write 20 integers created randomly in the range 1-100 (inclusive) into the file using text I/O. Integers are separated by spaces in the file (not a newline). Read the data back from this text file in.text and display the data in increasing order separated by spaces (not a newline).

Problem 3

The text file on the Web http://turing.manhattan.edu/~ankur.agrawal/misc/scores.txt contains an unspecified number of scores. Write a program that reads the scores from the webfile and displays their total and average. Scores are separated by blanks.

Problem 4

Read the webpage at http://turing.manhattan.edu/~ankur.agrawal/misc/count.txt Count the number of vowels, consonants and words and write the count values in a file called output.txt which should be created on your desktop. The file should contain the following three statements:

The number of vowels is XXX

The number of consonants is XXX

The number of words is XXX

Finally, you will also display these values on the screen.