## Math 201 - Test 3b

Name \_\_\_\_\_

April 28, 2011

## Score \_\_\_\_\_

These test problems are due Thursday, May 5, at the beginning of class.

- 1. (5 points) Suppose f and g are two user-defined functions that both take a single double and return a double. Write a C++ function that accepts f, g, and x, andreturns f(x) + q(x).
- 2. (5 points) Write a C++ function that accepts two floats and has no return value. The function should accept two numbers a and b, and on function exit, a should be replaced by a + b and b should be replaced by a - b.
- 3. (5 points) Use the formulas we derived in class to find an equation of the line that best fits the following data.

(1.1, 3.6), (2.4, 6.1), (2.6, 6.3), (3.0, 6.9), (3.5, 8.3), (4, 9.6), (4.1, 10.2)

- 4. (4 points) Suppose A is an n-by-m 2-D array. Write a C++ function that accepts A, n, and m, and returns the sum of the absolute values of the entries of the array. (You can assume the physical dimensions of A are 20-by-20 and  $n, m \leq 20$ .)
- 5. (16 points) Write a single C++ program that does all of the following.
  - Prompts for and reads a user-supplied output file name.
  - Opens the output file and checks for successful opening.
  - Reads a list of user-supplied integers from console input until end-of-file.
  - Outputs the integers to the file.
  - Closes the output file.
  - Opens the same file for input and checks for successful opening.
  - Reads the file's integers and outputs them, one per line, to console output.
  - Closes the file.