Math 201 - Test 3b

May 13, 2015

Name _____

Score _____

Show all work to receive full credit. Supply explanations where necessary.

1. (10 points) Write a complete C++ program[1] that uses a fixed integer-count loop to output to the terminal the values (one per line) of $\tan(x)$ for $x = 0, 0.1, 0.2, \ldots, 1.0$. Each line of output should have the appearance such as: `tan(0.1) = 0.100335`

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[1]It must compile and run.

2. (7 points) Write a complete C++ function[2] that accepts as an argument a type `double` and returns a type `float` with the following value:

$$f(x) = \begin{cases} 3x^4, & x < 5 \\ \sqrt{x}, & 5 \le x < 8 \\ 1, & x \ge 8 \end{cases}$$

3. (3 points) Write the appropriate C++ statement to declare a one-dimensional array of size 50 and initialize it so that `x[0]` = `-1.5`, `x[1]` = `2.0`, `x[2]` = `-5.7` and all other array elements are zero.

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[2]If implemented with a main function, it must compile and run.

4. (5 points) Write a C++ code fragment in which type a `float` is read, one-at-a-time, from console input and the sum is accumulated until end-of-file is reached. Your code fragment should include all code necessary to declare the required variable(s) and perform the required task, but no other code is necessary.