Programming Assignment #1

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Fast multiplication

Implement the functions using only multiplication to give the answers of following: For any floating-point number x in the range [1.00001, 1.1] using 80-bit (long double) representation,

1. Find out the largest positive integer N such that x^N does not cause overflow.

2. For any positive integer N = $2^H3^I5^J7^K$ with non-negative H, I, J, and K, compute x^N.

Student Name:

Student ID:

Grading:

(50%) Correctness

(10%) Documented time and space complexity analysis

(10%) Performance ranking in class

(5%) Coding style and documentation

(5%) Clean compilation

(15%) Modular design, test case design, golden generation

(5%) Automation, performance data capture and/or comparison

(-20%) Late penalty per day

(-5%) Special service penalty

Total score: 200

Final score: