

Andrew login ID: _____

Full Name: _____

Recitation Section: _____

CS 15-213, Spring 2009

Exam 1

Tues., February 24, 2009

Instructions:

- Make sure that your exam is not missing any sheets, then write your full name, Andrew login ID, and recitation section (A–J) on the front.
- Write your answers in the space provided for the problem. If you make a mess, clearly indicate your final answer.
- The exam has a maximum score of 100 points.
- The problems are of varying difficulty. The point value of each problem is indicated. Pile up the easy points quickly and then come back to the harder problems.
- This exam is OPEN BOOK. You may use any books or notes you like. No calculators or other electronic devices are allowed.
- Good luck!

1 (16):
2 (22):
3 (13):
4 (13):
5 (22):
6 (14):
TOTAL (100):

Problem 1. (16 points):

Consider a new floating point format that follows the IEEE spec you should be familiar, except with 3 exponent bits and 2 fraction bits (and 1 sign bit). Fill in all blank cells in the table below. *If*, in the process of converting a decimal number to a float, you have to round, write the rounded value next to the original decimal as well.

Description	Decimal	Binary Representation
Bias		

Problem 2. (22 points):

Consider the C code written below and compiled on a 32-bit Linux system using GCC.