

CSCI-21 Lab 6 due 10/20/22

Pencil-and-paper exercises. Please, no calculators. Solve these alone first. Assume the hardware truncates values that cannot be represented exactly. After solving them, compare your solutions with those of one or two other people. If your answers disagree, make sure you understand who got it wrong and fix the answers. Turn in each of your paper worksheets, not just one for the whole group. You may send me PDFs instead of turning these in at the start of class. Show your work. After checking with other people, use the IEEE-754 calculator on my Web site to check. If there is a problem, work together to figure out how you got it wrong, and fix it.

Convert the following values to 32-bit IEEE-754 floating-point. Again, assume the system truncates the significand when needed. Represent the results in both binary and hexadecimal.

1.0

2.5

17.625

-32.75

0.1

-0.2

31.71875

32768.0

Convert the following hexadecimal IEEE-754 32-bit values to their decimal equivalents.

0x40A80000

0xC0000000

0x00000000

0x80000000

0x7F800000

0xFF800000

0x7F80C000

0x7FC00000

0x42B7C000