Fall ’14 CIS 314 Assignment 1 – 100/100 points – Due Tuesday, 10/14, 11:59 PM

This assignment will involve solving problems and writing code related to integer/floating point representation and arithmetic. Please submit individual source files for coding exercises (see naming conventions below) and a single solution document for non-coding exercises (.txt, .doc, or .pdf). Your code and answers need to be documented to the point that the graders can understand your thought process. Full credit will not be awarded if sufficient work is not shown.

1. [10] B&O’H 2.57. Also write a main() function to test your procedures. Name your source file 2-57.c

2. [15] B&O’H 2.60. Also write a main() function to test your function. Name your source file 2-60.c

3. [15] B&O’H 2.71. Also write a main() function to test your function. Name your source file 2-71.c

4. [15] B&O’H 2.72. Also write a main() function to test your function. Name your source file 2-72.c

5. [15] Convert the following hex values to decimal assuming that they are stored as 2s complement integers.
   a. (5) 0x0000000B
   b. (5) 0x0000013A
   c. (5) 0xFFFFFE6

   Write your answers in your solutions document.

6. [15] Convert the following hex values to decimal assuming that they are encoded as IEEE 754 single-precision floating-point numbers:
   a. (5) 0x40d00000
   b. (5) 0x42360000
   c. (5) 0xc2360000

   Write your answers in your solutions document.
7. [15] Convert the following decimal numbers to a 16-bit format based on IEEE 754 single-precision floating point but with 6 exponent bits and 9 fraction bits (and 1 sign bit). Write your answers in your solutions document.

a. (5) 218.0
b. (5) 21.4
c. (5) 5.4

Write your answers in your solutions document.

Upload .zip file to Blackboard (see Assignments section for submission link).