CPTG445 HW 2

1. What decimal number does the bit pattern 0x0C000000 represent if it is a single precision floating point number using the IEEE 754 standard.

2. What decimal number does the bit pattern 10101010 11001100 11001001 00100111 represent if it is a single precision floating point number using the IEEE 754 standard.

3. Write down the binary representation of the decimal number 63.25 assuming the IEEE 754 single precision format.

4. Write down the binary representation of the decimal number -12.34 assuming the IEEE 754 single precision format.

5. Using a table similar to that on slide 16, calculate 74 divided by 21 using the hardware described on slide 15. You should show the contents of each register on each step. Assume both inputs are unsigned 6-bit integers.

Bonus:

Just like question 5 but use the hardware described on slide 17. This algorithm requires a slightly different approach than the algorithm shown on slide 15. You will want to think hard about this, do an experiment or two, or else go to the web to figure out how to make this work correctly. (Hint: one possible solution involves using the fact that the Remainder register in the circuit can be shifted in either direction.)