Dylan Stewart

Homework 4

CSCI4350

Due: 3/23

Please show and explain your work to get full credit.

Please do not try to copy answers from Internet or your classmate. (I will be very harsh for cheating)

Due: 3/23 (Wed) 11:59pm

1. (10 points) Represent the following intergers as a 5 bit 2's complement numbers. (put N/A if not possible).

(14): 01100

(-9): 01001 = 10110 +1 = 10111

(-4): 00100 = 11011 + 1 = 11100

(-17): N/A (101111 = -17)

(7): 00111

(16): N/A (010000 = 16)

2. (15 points) Using a 5-bit version of the unsigned multipcation algorithm, multiple 12 and 5. Verify your answer.

3. (15 points) Using a 5-bit version of the booth algorithm, multiple -12 and 5. Verify your answer.

4. (15 points) Using a 5-bit version of the unsigned division algorithm, divide 11 by 3. Verify your answer.

5. (15 points) Using a 5-bit version of the signed division algorithm, divide -11 by -3. Verify your answer.

6. (15 points) Encode -7.8125 to hexadicmal representaion. Assuming the IEEE 754 single precision format (32-bit).

1001 = -7

0.8125 \* 2 = 1.625 = 1

0.625 \* 2 = 1.25 = 1

0.25 \* 2 = 0.5 = 0

0.5 \* 2 = 1 = 1

1001.1101 = 1.0011101 x 23

7. (15 points) Decode 0x42318000 into a floating number using IEEE 754 standard.