HW 5

Number Systems

Name: _____ Time spent: _____min

1) Add the following binary numbers – be sure to check the results.   30pts

Unsigned binary (16 bits)
            0000 0001 1001 0110
+   0000 0101 1010 1101

Unsigned binary (8 bits)
            1001 0110
+   1010 1101

Signed binary (8 bits)
            0011 0110
+   1010 0101

2) Subtract the following binary numbers – be sure to check the results.   30pts

Signed binary (16 bits)

0000 0001 1001 0110
-    0000 0101 1010 1101

Unsigned binary (16 bits)

0000 0001 1001 0110
-    0000 0101 1010 1101

Signed binary (8 bits)

0001 1001
-    1110 0101

3) Convert the following numbers - you must show your work.   20pts

Decimal Value --> Hex (assume 2's comlement)

-88

_____

Binary Value   (8 bit two's-complement) --> Hex

1100 0001

_____

Binary Value   (8 bit unsigned binary)   --> Hex

1100 0001

_____

Hex Value   (8 bit unsigned binary)   --> Decimal

0xCC

_____

4) Consider the following equations – determine the results T or F if you are using 32bit floating point numbers

Explain your answers   20pts

(no programming – just 32bit floating point math)

$1 - (10*0.1) = 0$ T   F
                  explain:

$22 / 10 * 10 = 22$ T   F
                  explain:

$22 * 10 / 10 = 22$ T   F
                  explain: