Worksheet 03

Name Chayden Richardson Section 1002

1) What are the steps to convert a decimal number to a IEEE floating-point number?

a) Determine the sign

b) Convert to binary & normalize

c) Compute & the biased exponent

d) Convert to Hex

2) What is the IEEE 32 bit floating-point representation of -0.75_{10}?

$-.11 \Rightarrow -1.1 \quad 2^{-1}$

$127 + (-1) = 126$

0111 1110

31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
1	0	1	1	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B				F				4				0				0				0				0				0			

2) What is the decimal representation of the IEEE 32 bit floating point 0xc0f000000

31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
1	1	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C				0				F				0				0				0				0				0			

-

$1000\ 0001 = 129 - 127 = 2$

$1.111 \Rightarrow -111.1$

$= \boxed{-7.5}$