1. Fill in the blanks

|  |  |  |
| --- | --- | --- |
| **Hexadecimal** | **Decimal** | **Binary** |
| 0xf.8 | 15.5 | 1111.1 |
| 0xc.a | 12.6875 | 1100.1011 |
| 0x0.8 | .5 | 0.1 |
| 0x1. | 1.250 | 1.01 |
| 0x | 9.625 | 1001.101 |
| 0x | 4.875 | 100.111 |
| 0x | 13.000 | 1101.0 |
| 0x | 1.125 | 1.001 |
| 0x | 6.875 | 110.111 |
| 0x | 2 | 10.0 |

S=sign, F=fraction, E=exponent

((-1)^S) \* F \* (2^(E-127))

IEEE-754 conversions

2. Convert 226.75 to Hex

226 = 11100010

.75 \* 2 = 1.5 .5 \* 2 = 1.0 so .11

11100010.11 => 1.110001011 7digits

11000101100000000000000

7 + 127 = 134 = 10000110

0 10000110 11000101100000000000000

0100 0011 0110 0010 1100 0000 0000 0000

4 3 6 2 c 0 0 0

0x4362c000

3. Convert 0xc37e6000 to Decimal

1100 0011 0111 1110 0110 0000 0000 0000

1 10000110 11111100110000000000000

- 134 - 127 1 + (s1\*2^-1) + ... + (sn\*2|-n) = 1.987304688

-1 \* 1.987304688 \* 2^7

-254.375