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CSCI-21 Quiz #6 Name Israel Cortez

Please use pencil and erase mistakes. No books, notes or electronic devices. Put a box around your answers so I can see them separately from your scratch work. 10 points.

Convert 73.5625 decimal to binary. Do not convert to IEEE 754 format, just make a fixed point binary number with whole and fractional parts. (2 points)

128	64	32	16	8	4	2	1	
0	1	0	0	1	0	0	1	= 73

	.5625
1	.1250
0	.2500
0	.5000
1	.0000

2 01001001.1001

Convert 19.375 to IEEE 754 single-precision floating point format. Write this in hexadecimal. (4 points)

128	64	32	16	8	4	2	1	
0	0	0	1	0	0	1	1	= 19

	.375
0	.750
1	.500
1	.000

$00010011.011 = 1.0011011 \times 2^4$ (M)

4 Biased Exponent = 127 + 4 = 131 = 128 + 3 = 10000011

0	10000011	00110110000000000000000
4	1	9 B 0 0 0 0

0x419B0000

Convert 0x47000000 from IEEE 754 floating point format to decimal. (4 points)

0	10001110	00000000000000000000000
4	7	0 0 0 0 0 0

sign: 0, Biased Exponent: 128 + 14 = 127 + 15, Mantissa: 0

4 $1.0 \times 2^{15} =$ 32,768

$2^8 \cdot 2^7 =$

	256
	128
	2048
	5120
	25600
	32,768