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2/17/2016 floatingpoint.pdf

Given float: -35.1875

-3.51875 * 10 = y * 2^5

-1.099609375 * 2^5 = y

.099609375 = 1/2^4 + 1/2^5 + 1/2^8 + 1/2^9

Mantissa in binary = 00011001100000000000000

Exponent = 5 + 127

Exponent in binary = 10000100

Sign = 1

Combined: 1100 0010 0000 1100 1100 0000 0000 0000

In hex (0xc20cc000) -> **0x00c00c2** final

Given Hex: 0x00401f41 -> 0x411f4000 (big endian)

In Binary: 0100 0001 0001 1111 0100 0000 0000 0000

Sign = 0

Exponent in binary 10000010

Exponent 130 – 127 = 3

Mantissa in binary = 00111110100000000000000

Mantissa = 1 + 1/2^3 + 1/2^4 + 1/2^5 + 1/2^6 + 1/2^7 + 1/2^9 = 1.24414

1.24414 * 2^3 = **9.953125** final