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Floatingpoint.pdf
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Your magic (32 bit) floating point number is 19.53125
This is the number that needs to be converted to (little endian) binary, and expressed in hexadecimal.

Your other magic floating point number is, in hex, 0x00809ec2
This is the number that needs to be converted to a (32 bit) floating point number.
Note that the hexadecimal printed above is in little-endian format!

Number: 19.53125

I. Sign is 0 because positive

II. 19.53125/2^4 =1.22070125=MANTISSA
and EXPONENT CALCULATION 4+127=131=1000 0011 in binary

III. 1.22070125 -1 = 0.22070125 = (1/8) +(1/16) +(1/32) +(1/512)
001110001

IV. Check by using old way of learning:
19.53125 to binary is 10011.10001
19=10011
.53125*2 = 1.0625
.0625*2 = 0.125
.125*2 = 0.25
.25*2 = 0.5
.5*2= 1.0
0*2=0
so we get 10001
therefore, 10011.10001
move until 1.numbers we get: 1.001110001 (moved 4 places to left hence is the exponent part: 4)
subtract 1 and get: .001110001 which is leading part of fraction portion same as in step III. 001110001

V. Fraction part is: 001 1100 0100 0000 0000 0000

VI. Together binary is:

Sign	Exponent	Fraction
0	1000 0011	001 1100 0100 0000 0000 0000

VII. Convert to hex by grouping in fours

0100	0001	1001	1100	0100	0000	0000	0000
4	1	9	C	4	0	0	0

0x419c4000

VIII. Convert the hex to little endian hex:

0x00409c41

(binary)0000 0000 0100 0000 1001 1100 0100 0001

Hex: 0x00809ec2

I. Convert to big endian:

0xc29e8000

In binary: 1100 0010 1001 1110 1000 0000 0000 0000

II. First bit is the sign bit=1 so it is negative (-)

III. Exponent: 1000 0101 = (133 in decimal) so 133-127= 6

IV. Fraction: .001 1110 1000 0000 0000 0000

Look at where ones are and do the arithmetic

(1/2)^3+(1/2)^4+(1/2)^5+(1/2)^6+(1/2)^8 =0.23828125

Add one and get: 1.23828125

Multiply by 2^6 because exponent was 6 and get: 79.25

Remember the sign: -79.25