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//09/19/17
//floatingpoint.pdf

```
Your magic (32 bit) floating point number is 38.1875
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, 0x00401ec3
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!
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1) 38.11875

sign: (positive) 0

exponent: 5 + 127 = 132

1000 0100b

mantissa:

38.1875/32 = 1 + 6.1875/32 = 1 + 6/32 + 3/(32*16)

= 1+ (3/16 + $3/2^9$)

= 1+ (1/8 + 1/16 + $1/2^8$ + $1/2^9$)

The number in big-endian is 0100 0010 0001 1000 1100 0000 0000 0000

Then, the number in little endian is 0000 0000 1100 0000 0001 1000 0100 0010

The hexadecimal form is 0x00c01842

2) 0x00401ec3 (little-ENDIAN) = 0xc31e4000 (big-ENDIAN)

Convert to big-endian binary format: 1100 0011 0001 1110 0100 0000 0000 0000

1 = negative

exponent:

x86 = 134

e = 134 – 127 = 7

mantissa: 1+ $(1/2)^3$ + $(1/2)^4$ + $(1/2)^5$ + $(1/2)^6$ + $(1/2)^9$ = 1.23633

Floating number = -1.23633*2^7

= -158.25