2. (6 points) Floating Point

Write the base 10 number -71.09375×10^{-2} as a 32-bit, IEEE normalized floating point number with biased exponent. First you must *simplify the scientific notation* and then begin the conversion to binary. Follow the algorithm discussed in class to convert the fractional binary portion of the number to binary.

31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16
1	0	1	1	1	1	1	1	0	0	1	1	0	1	1	0

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Sign = 1 as its negative

Exponent = -1 = 126 - 127 = 0111 1110

0.7109375 * 2 = 1.42875

0.42875 * 2 = 0.84375

0.84375 * 2 = 1.6875

0.6875* 2 = 1.375

0.375 * 2 = 0.75

0.75 *2 = 1.5

0.5 * 2 = 1

= 0.1011011
= 1.011011 (for 2^-1)