- BOTH ALGORITHM (MULTIPLICATION USING BOOTH ALGORITHM)
- CONVERT A NUMBER (BASE 10) INTO IEEE754 (SINGLE OR DOUBLE PRECISION)
- CONVERT FROM IEEE764 TO NUMBER (BASE 10)

PROBLEM

Use Booth's multiplication algorithm for computing:
(-7) x (10) NOTE: YOU CANNOT SWITCH THE ORDER BETWEEN M AND Q (THE ORDER IS MXQ)

-7 = M = 1001 Q=01010
+7 = -M = 0111

	A	Q	Q_{-1}	
	0000	01010	0	
	0000	00101	0	
A-M	0000			Note: A – M = A + (-M)
	0111			
	0011	10010	1	
A+M	0011			
	1001			
	1100			
	1110	01001	0	
A-M	1110			
	0111			
	1)0101			
	0010	10100	1	
A+M	0010			
	1001			
	1011			
	1101	11010	0	

ANSWER: 1101 11010 -70

PROBLEM

Convert +26.50 in a IEEE 754 single precision format.

26.5 = 11010.1 $1.10101 * 2^4$ Bias Exp: 4 + 127 = 128 + 3 = 10000011
ANSWER: 0 10000011 101010000…0
23 bits

PROBLEM

What is the decimal floating number represented by the 32-bit word
1000 1110 0111 1000 0000 0000 0000 0000
Sign = 1 bias exp: 00011100 4 + 8 + 16 = 28 **exp = 28 – 127 = -99**

$(-1)^{1} * (1 + .1111) * 2^{-99}$ .1111.--> .5 + .25 + .125 + .0625 = .9375
ANSWER $-1.9375 * 2^{-99}$