PROBLEM 1:

a&b)

nächste zu null:
0/1 0000 00000000000

V: +/-
C: 0000 = -7
M: 1*2^(-7)

größte positive/negative zahl:
1/0 1111 11111111111

V: +/-
C: 1111 = 1+2+4+8 -7 = 8
M: 1,11111111111*2^8

c)

17 = 16+1 = (10001)_2_ = (1,0001)_2_*2^4
2^(-3) = (1)_2_ * 2^-3 = (0,0000001)_2_ * 2^4

17 + 2^(-3) = (1,0001001)_2_*2^4

V: +
C: 4+7 = 8+2+1 = 1011
M: 1,0001001*2^4

0 1011 00010010000

d)

(0.F)_16_ = (0,1111)_2_ = (1,111)_2_*2^(-1)

V: +
C: -1+7 = 4+2 = 0110
M: 1,111*2^(-1)

0 0110 11100000000

PROBLEM 2:

a)

0 01111100 10000000000000000000000
V: +
C: 01111100 = 64 + 32 + 16 + 8 + 4 - 127 = -3
M: 0,11 * 2^(-2)

0 01111101 01000000000000000000000
V: +
C: 01111101 = 64 + 32 + 16 + 8 + 4 + 1 - 127 = -2
M: 1,01 * 2^(-2)

Res:
V: +
C: 01111110 = -1
M: (1,01 + 0,11) * 2^(-2) = 10 * 2^(-2) = 1 * 2^(-1)

0 01111110 00000000000000000000000

b)

0 01111101 10000000000000000000000
V: +
C: 01111101
M: 1,1

1 01111110 01000000000000000000000
V: -
C: 01111110
M: 1,01

Res:
V: -
C: 01111110 + 01111101 = 01111111
M: 1,1 * 1,01 = 1,1 + 0,011 = 1,111

1 01111111 11100000000000000000000