1. $N=(-1)^0\times 2^{104-127}\times 1.1010100001010000$

$\approx 1.986\times 10^{-7}$

2. $N=(-1)^0\times 2^{1000-1023}\times 1.1010000110000\cdots\cdots000$

$\approx 1.986\times 10^{-7}$ (将指数转为1111 0000)

3. (1) $(2-2^{-23})\times 2^{127}$ (2) 2^{-149}

(3) 2^{-126}

(4) $0X00000000=00\cdots00$ (32位)

$8.25=2^3+2^{-2}=1000.0100_{(2)}$

$=01000001000010000\cdots00_{(2)}$ (32位)

$=0X41040000$

$0X00000F00=00000000000000001111\,00000000_{(2)}$

$=(-1)^0\times 2^{-126}\times(1+2^{-12}+2^{-13}+2^{-14}+2^{-15})$

$39.5625 = 2^5 + 2^2 + 2^1 + 2^0 + 2^{-1} + 2^{-4}$

$= 100111.1001_{(2)} = 0|0000|0000|111|00|0000\cdots000_{(32位)}$

$= 0X42|E4000$

$0XFF94BEEF = 11111111|00|0|00|01|1110|1111_{(2)}$

$= NaN$

$-\infty = 11111111|000\cdots000_{(2)}(32位) = 0XFF800000$

4. $2Ki = 2^{11}$, $256Pi = 2^{58}$, $512Ki = 2^{19}$,

$64Gi = 2^{36}$, $16Mi = 2^{24}$, $128Ei = 2^{67}$

5 (1) unsigned number: 255, +1越界

2's complement number: 127, +1越界

(2) unsigned number:

00000000, 0000001, 无

2's complement number:

00000000, 0000001, 11111111

(3) unsigned number:

000|000|, 无

2's complement number:

000|000|, 1110|111|