1.

a)

5.75

101.11

4+1 . 1/2 + 1/4

.5 + .25

5 .25

101.11

b)

63/64

0.984375

0.111111

.984375 · 2 = 1.96875 | 1

.96875 · 2 = 1.9375 | 1

.9375 · 2 = 1.875 | 1

.875 · 2 = 1.75 | 1

.75 · 2 = 1.5 | 1

.5 · 2 = 1 | 1

c)

a.8125

1001.101

.5

.25

.125

.8125 · 2 | 1

.625 · 2 | 1

.25 · 2 | 0

.5 · 2 | 1

a) was done by eye

b) was done using the mult method, c) too.

128+4

2.

100010.111001

5

.890625 · 2 | 1
.78125 · 2 | 1
.5625 · 2 | 1
127+5 .125 · 2 | 0
132 .25 · 2 | 0
.5 · 2 | 1

10

0 | 10000100 | 00010111001
sign | exponent | mantissa

01000010000010111001

Steps
Find sign
find exponent
make mantissa

3.

1.0

.0625

1/16

7C

8+3

36+16+12+64

1+2+8+16+32+64

3

28+32

127-127

3

-4

.0001

Steps

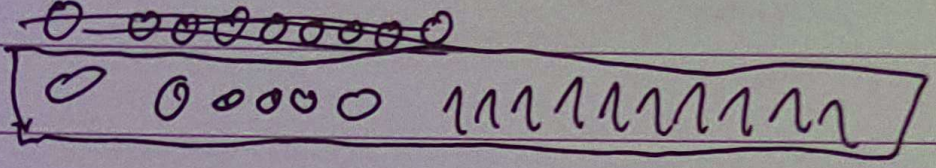
1) unbias exponent

2) fraction Point

4.

Denormalized numbers do not have a leading 1.

largest denorm:



Smallest norm: