Atividades - Ponto Flutuante

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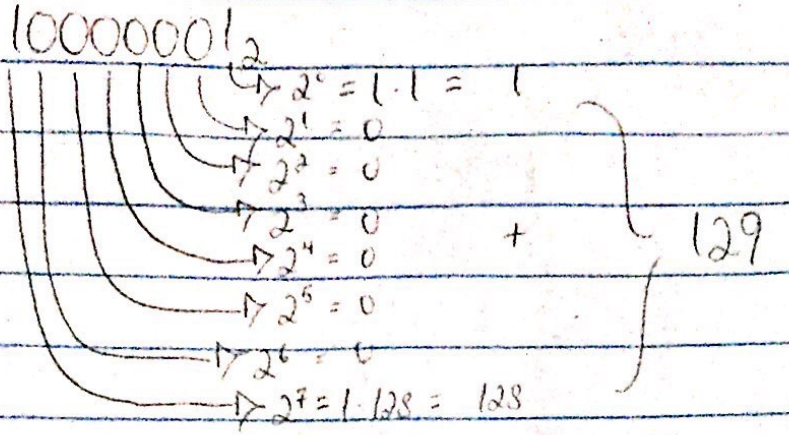
① 1 → (-)



Mantissa → 1·2 = 1 → 0,25

4

(1) 1·(1+0,25)·$2^{129-127}$ =

1·1,25·2^2 =

1,25·4 = 5

(R = -5)

② a) $-0,005859375_{10}$

00000011

0,005859375 · 2 = 0,1171875

0,1171875 · 2 = 0,234375

0,234375 · 2 = 0,46875

0,46875 · 2 = 0

0,1875 · 2 = 0

0,375 · 2 = 0

0,75 · 2 = 1

0,5 · 2 = 1

$0,00000011 = 1,1 \cdot 2^{-8}$

1 → Sinal

Expoente → 127 - 8 = 119

$119_{10} = 1110111_2$

119 | 2
59 | 2
1 29 | 2
1 14 | 2
0 7 | 2
1 3 | 2
1 1

10111011110000000000000000000

b) $-0,96875_{10}$

$0,96875 \cdot 2 = 1,9375$

$0,9375 \cdot 2 = 1,875$

$0,875 \cdot 2 = 1,75$

$0,75 \cdot 2 = 1,5$

$0,5 \cdot 2 = 1,0$

$0,11111 = 1,1111 \cdot 2^{-1}$

Sinal = 1

Expoente = 127 - 1 = 126

$126_{10} = 1111110_2$

126 | 2
0 63 | 2
1 31 | 2
1 15 | 2
1 7 | 2
1 3 | 2
1 1

Mantissa = 11110000000000000000000

10111111011110000000000000000000

c) $0,15625_{10}$

$0,15625 \cdot 2 = 0,3125$

$0,3125 \cdot 2 = 0,625$

$0,625 \cdot 2 = 1,25$

$0,25 \cdot 2 = 0,5$

$0,5 \cdot 2 = 1$

$0,00101 = 1,01 \cdot 2^{-3}$

$124_{|2}$
$062_{|2}$
$031_{|2}$
$115_{|2}$
$17_{|3}$
$13_{|2}$
11

Final = 0

Expoente = 127 − 3 = 124 = 01111100

00111111000 10000000000 00000000000

d) $-15,1875_{10}$

$1111,0011 = 1,1110011 \cdot 2^3$

$15_{|2}$
$17_{|2}$
$13_{|2}$
11

15 = 1111

$0,1875 \cdot 2 = 0,375$

$0,375 \cdot 2 = 0,75$

$0,75 \cdot 2 = 1,5$

$0,5 \cdot 2 = 1$

$130_{|2}$
$065_{|2}$
$132_{|2}$
$016_{|2}$
$08_{|2}$
$04_{|2}$
$02_{|2}$
01

Final = 1

Expoente = 127 + 3 = 130

10000010

Mantissa = 1110011

1 10000010 11100110000000000000000