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3.23 63.25 Floating single precision.

I] Binary of 63 = 0011 1111

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

II] Binary of 0.25 = 0.01

$0.25 \times 2 = 0.50$	0
$0.50 \times 2 = 1.00$	1

63.25 = 0011 1111 . 01

$= 1.111101 \times 2^5$

SIGN	Exponent	Mantissa
1	8	23

Exponent = 127 + 5 = 132

= 1000 0100

Scanned by CamScanner

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Mantissa = 1111101

63.25 =

~~0 1000 0100 0000000000000000 1111101~~

~~sign exponent Mantissa~~

0 1000 0100 1111 101 0000000000000000

Sign exponent mantissa

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3.24 63.25 in double precision format

63 ≡ 0011 1111 } from previous sum

0.25 = 0.01

$63.25 = 1.11111101 \times 2^5$

Double precision format

Sign	exponent	mantissa
1	11 bits	52 bit

From previous sum

exponent = 1000 0100

mantissa = 1111 101

0 1000 0100

exponent = 1023 + 5

= 1028

Binary for 1028 = 1000 0000 100

Mantissa = 1111 101

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0 | 1 0000 0001 00 | 11111010 000000000000000000000000

000000000000000000

Sign | exponent | mantissa

3.25   63.25 using IBM Jormat

63 = 0011 1111

0.25 = 0.01

63.25 = 1.1111 1101 $\times 2^5$

IBM Jormat

Sign	Exponent	Mantissa
1	7	24

~~exponent = 127+5~~ =

exponent = 63+5 = 68

= 1000 100

Mantissa = 1111 101

0   1000100   1111101 00000000000000000

Sign   exponent

Mantissa + 17 zelos

3.4 1 $\frac{-1}{4} = -0.25$

$0.25 \times 2 = 0.50$ 0

$0.50 \times 2 = 1.00$ 1

$0.25 = 0.01$

$-0.25 = 1.01$

2-s complement is not possible as it changes the bit before the point

Therefore $-0.25 = 0.01$