

1a $a = 63.25 = 63 + 1 \times \frac{1}{4}$

$$\begin{array}{r} 2 \overline{) 1} \text{ } \\ 2 \overline{) 3} \text{ } \\ 2 \overline{) 7} \text{ } \\ 2 \overline{) 15} \text{ } \\ 2 \overline{) 31} \text{ } \\ 2 \overline{) 63} \text{ } \end{array}$$

0011111

0.25

$$x2 = 0 + 0.5$$

$$x2 = 1 + 0$$

0.01

$$00111111 \cdot 01 \times 2^0$$

$$001.1111101 \times 2^5$$

$$5 + 127 = 132 \rightarrow 10000100$$

exp. bits =

1000	0100
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$$\begin{array}{r} 2 \overline{) 1} \text{ } 1 \\ 2 \overline{) 2} \text{ } 0 \\ 2 \overline{) 4} \text{ } 0 \\ 2 \overline{) 8} \text{ } 0 \\ 2 \overline{) 16} \text{ } 0 \\ 2 \overline{) 32} \text{ } 1 \\ 2 \overline{) 64} \text{ } 0 \\ 2 \overline{) 128} \text{ } 0 \end{array}$$

Fraction bit =

111	1101	0000	0000	0000	0000
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sign =

0

$\therefore b = 1.1111101$

$c = 5$

$d = 1000 \mid 0100$

$e = 111 \mid 1101 \mid 0000 \mid 0000 \mid 0000 \mid 0000$

$f = 427D \ 0000$

1b

$$f = 2e92c3bf$$

$$= \underbrace{0010 \mid 1110 \mid 1001}_{\text{Exp.}} \mid \underbrace{0010 \mid 1100 \mid 0011 \mid 1011 \mid 1111}_{\text{Fraction}}$$

$$s: 0$$

$$\text{Exp: } 0101 \mid 1101 = 93 - 127 = -34$$

$$\text{Fra: } 001 \mid 0010 \mid 1100 \mid 0011 \mid 1011 \mid 1111$$

$$(-1)^0 \times (1 + \underbrace{0.001 \mid 0010 \mid 1100 \mid 0011 \mid 1011 \mid 1111}_b) \times 2^{-34}$$

$$= 2^{-3} + 2^{-6} + 2^{-8} + 2^{-9} + 2^{-14} + 2^{-15} + 2^{-16} + 2^{-18} + 2^{-19} + 2^{-20} + 2^{-21} + 2^{-22} + 2^{-23}$$

$$= 0.14659488201$$

$$-1^0 \times (1 + 0.14659488201) \times 2^{-34}$$

$$\therefore e: 001 \mid 0010 \mid 1100 \mid 0011 \mid 1011 \mid 1111$$

$$d: 0101 \mid 1101$$

$$c: -34$$

$$b: 1.14659488201$$

$$a: 1.14659488201 \times 2^{-34}$$