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(3) a) $(1111.0101)_{10} = (?)_2 = (?)_4 =$

1024
64
16
7
(1111)

10 9 8 7 6 5 4 3 2 1 0

$(10001010111.000000101001)_2$

$0.0101 \times 2 = 0.0202 \rightarrow \Delta_{-1} = 0$

$0.0202 \times 2 = 0.0404 \rightarrow \Delta_{-2} = 0$

$0.0404 \times 2 = 0.0808 \rightarrow \Delta_{-3} = 0$

$0.0808 \times 2 = 0.1616 \rightarrow \Delta_{-4} = 0$

$0.1616 \times 2 = 0.3232 \rightarrow \Delta_{-5} = 0$

$0.3232 \times 2 = 0.6464 \rightarrow \Delta_{-6} = 0$

$0.6464 \times 2 = 1.2928 \rightarrow \Delta_{-7} = 1$

$0.2928 \times 2 = 0.5856 \rightarrow \Delta_{-8} = 0$

$0.5856 \times 2 = 1.1712 \rightarrow \Delta_{-9} = 1$

$0.1712 \times 2 = 0.3424 \rightarrow \Delta_{-10} = 0$

$0.3424 \times 2 = 0.6848 \rightarrow \Delta_{-11} = 0$

$0.6448 \times 2 = 1.3696 \rightarrow \Delta_{-12} = 1$

$= (101113.000221\ldots)_4 = (457.029\ldots)_{16}$

b) $(66770377.0637)_8 = (2020212100102121.00201021)_9$

c) $6656777_8 \div 6$

$6656777_8 \div 6 = 1107652_8$, resto 3

$1107652_8 \div 6 = 141234_8$, resto 2

$141234_8 \div 6 = 20157_8$, resto 2

$20157_8 \div 6 = 2547_8$, resto 5

$2547_8 \div 6 = 346_8$, resto 3

$346_8 \div 6 = 46_8$, resto 2

$46_8 \div 6 = 6$, resto 2

$6 \div 6 = 1$, resto 0

1

$= (102235223)_6$

d) $(DCEAD9.AFE7)_{16} = (?)_8$

$= (110111001110101011011001.1010111111100111)$

$(67165331.537634)_8$

e) $(320013222.0133201)_4 = (?)_8$

$(111000000111101010.000111111100001)_2$

$(700752.07702)_8$

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4) a)

$$\begin{array}{r} \text{FFAEDB.BFD}_{16} \\ +\ \text{1DDCCE.DF5D}_{16} \\ \hline (\text{11D8BAA.9F2D})_{16} \end{array}$$

b)

$$\begin{array}{r} 7756015.7715_{8} \\ +\ 7376613.66645_{8} \\ \hline (17354631.66015)_{8} \end{array}$$

c)

$$\begin{array}{r} \text{10110E.00A}_{16} \\ -\ \text{FBC9E.ECA7}_{16} \\ \hline (\text{546F.13F9})_{16} \end{array}$$

d)

$$\begin{array}{r} 10111101111.10111_{2} \\ +\ 11011100111.1011 \\ \hline (110011010111.01101)_{2} \end{array}$$

e)

$$\begin{array}{r} 100100001.0001_{2} \\ -\ 11111001.10111_{2} \\ \hline (0100111.01011)_{2} \end{array}$$

5) $X = -(63)_{16} = -(99)_{10} = -(01100011)_2$

$Y = -(2F)_{16} = -(47)_{10} = -(00101111)_2$

a) $x+y \rightarrow$

$$\begin{array}{rl} 10011101 & (x \text{ em compl à } 2) \\ +\ 11010001 & (y \text{ em } \text{''} \quad \text{''}) \\ \hline 101101110 & \end{array}$$

$= \text{Daí} -(10010010)_2 =$

→ overflow! $= -(146)_{10} = -(92)_{16}$

b) $x-y \rightarrow$

$$\begin{array}{r} 10011101 \\ +\ 00101111 \\ \hline 11001100 \end{array}$$

$= -(00110100) =$

$= -(52)_{10} = -(34)_{16}$

c) $y-x \rightarrow$

$$\begin{array}{r} 11010001 \\ +\ 01100011 \\ \hline 100110100 \end{array}$$

$= +(52)_{10} = +(34)_{16}$