AD1 — 2018/1º

22
1024
512
256
64
32
16
13
1917

③ a) $(111011111e1.0011)_2 = (1917.1875)_{10} = (13331.03)_4$

$0,0011 \times 2 = 0.0022 \rightarrow A-1=0$
$0,0022 \times 2 = 0,0044 \rightarrow A-2=0$
$0,0044 \times 2 = 0,0088 \rightarrow A-3=0$
$0,0088 \times 2 = 0,0176 \rightarrow A-4=0$
$0,0176 \times 2 = 0,0352 \rightarrow A-5=0$
$0,0352 \times 2 = 0,0704 \rightarrow A-6=0$
$0,0704 \times 2 = 0,1408 \rightarrow A-7=0$
$0,1408 \times 2 = 0,2816 \rightarrow A-8=0$
$0,2816 \times 2 = 0,5632 \rightarrow A-9=0$
$0,5632 \times 2 = 1,1264 \rightarrow A-10=1$
$0,1264 \times 2 = 0,2528 \rightarrow A-11=0$
$0,2528 \times 2 = 0,5056 \rightarrow A-12=0$
$A-13=1$

b) $(67078875,0667)_9 = (2021002122222112,00202021)_3$

c) $(675630,08 = (43141241,4)_5$

d) $(FAECD9,ACF7)_{16} = (76566331,531734)_8$

$(111\,|\,101\,|\,101\,|\,101\,|\,100\,|\,111\,|\,011\,|\,001,\,101\,|\,011\,|\,001\,|\,111\,|\,011\,|\,111)_2$
$(7\;\;6\;\;5\;\;6\;\;6\;\;3\;\;3\;\;1\,,\,5\;\;3\;\;1\;\;7\;\;3\;\;4)_8$

e) $(3301132002,03102311)_4 = (742742,15132)_8$

$(11\,|\,10\,|\,00\,|\,01\,|\,11\,|\,10\,|\,00\,|\,10,\,00\,|\,11\,|\,01\,|\,00\,|\,11\,|\,01\,|\,01)_2$
$(7\;\;4\;\;2\;\;7\;\;4\;\;2\;\;,\;\;1\;\;5\;\;1\;\;3\;\;2)_8$

④ a)
$$\begin{array}{r} 1\;1\;1\;1\;1\;1\;1\;1 \\ \#DAB1B,DFE \\ +\;ADECAB,DF3C \\ \hline (1AB97C7,BF1C)_{16} \end{array}$$

b)
$$\begin{array}{r} 1\;1\;1\;1\;1\;1\;1\;1 \\ 7765017,7745_8 \\ +\;6675674,673558 \\ \hline (16662714,670258)_8 \end{array}$$

c)
$$\begin{array}{r} 100\,12A,60B_{16} \\ -\;FDCAD,EBD9_{16} \\ \hline (247C,14D7)_{16} \end{array}$$

d)
$$\begin{array}{r} 1101011011,11101_2 \\ +\;1111010111,01111 \\ \hline (11101000011,01011)_2 \end{array}$$

e) $(100100101.0001)_2$

$$
\begin{array}{r}
(100100101.0001)_2 \\
-\ 11011111.01111_2 \\
\hline
(1000101.10011)_2
\end{array}
$$

5a) $X = -(63)_{16}$ $Y = -(21)_{16}$

$63_{16} = 0110\ 0011_2 = 99_{10}$

$-(63)_{16} = 1001\ 1100_2 + 1 = 1001\ 1101_2 = 9D_{16} = -99_{10}$

$21_{16} = 0010\ 0001_2 = 33_{10}$

$-(21)_{16} = 1101\ 1110_2 + 1 = 1101\ 1111_2 = DF_{16} = -33_{10}$

a) $-(63)_{16} + (-(21)_{16}) = -(63)_{16} - (21)_{16} = -(84)_{16}$

$= -99_{10} - 33_{10} = -132_{10}$

$132_{10} = 84_{16} = 1000\ 0100_2$

$-(132)_{10} = 0111\ 1011_2 + 1 = (0)1111100_2$

↳ overflow bit zero é positivo, mas resultado é negativo

b) $X - Y$ $-(63)_{16} - (-(21))_{16} = -(63)_{16} + 21_{16} = -(42)_{16} = BE_{16}$

$= -99_{10} + 33_{10} = -66_{10}$

$1001\ 1101_2 + 0010\ 0001_2 = 1011\ 1110_2 = BE_{16} = -(42)_{16}$

c) $Y - X = -(21)_{16} - (-(63)_{16}) = -(21)_{16} + 63_{16} = +42_{16}$

$= -33_{10} + 99_{10} = +66_{10}$

$1101\ 1111_2 + 0110\ 0011_2 = 1010\ 0010_2 = 42_{16} = 66_{10}$