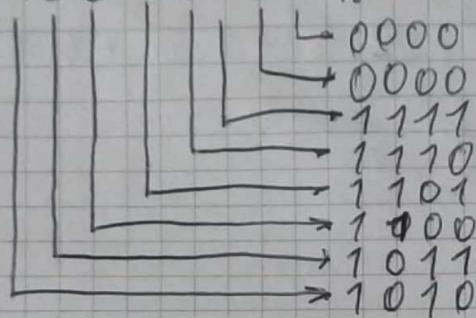


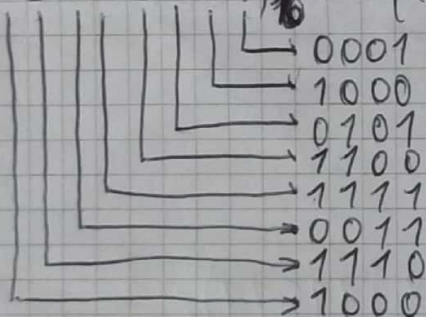
Ejercicios Org Comp ~~Práctico~~

1) a) $(ABCD E F 00)_{16} =$



$= (101010111100110111011110000000)_2$

c) $(8E3FC581)_{16} = (10001110001111111000101100000001)_2$



2) $(1110011110000011)_2 =$

$= 2^{15} + 2^{14} + 2^{13} + 2^{10} + 2^9 + 2^8 + 2^7 + 2^1 + 2^0$

$= 32768 + 16384 + 8192 + 1024 + 512 + 256 + 128 + 2 + 1$

$= (59267)_{10}$

$= (E783)_{16}$

$$c) (\overbrace{10110011011011}^{16\text{ bits}}, \overbrace{110000100000}^{16\text{ bits}})_2 =$$

$$= \cancel{0000} (0010110011011011, 110000100000)_2$$

$$= 2CDB, C20$$

$$= 2 \cdot 16^3 + 12 \cdot 16^2 + 13 \cdot 16^1 + 11 \cdot 16^0 + 12 \cdot 16^{-1} + 2 \cdot 16^{-2} + 0 \cdot 16^{-3}$$

$$= 2 \cdot 4096 + 12 \cdot 256 + 208 + 11 + \frac{12}{16} + \frac{2}{128} + 0$$

$$= 8192 + 3072 + 218 + \frac{3}{4} + \frac{1}{128}$$

$$= 11.483,75781$$

$$3) \text{ a) } \begin{array}{r} 59 \overline{) 2} \\ \underline{58} 29 \overline{) 2} \\ \underline{58} 27 \overline{) 2} \\ \underline{57} 13 \overline{) 2} \\ \underline{56} 6 \overline{) 2} \\ \underline{55} 3 \overline{) 2} \\ \underline{54} 1 \overline{) 2} \\ \underline{53} 0 \overline{) 2} \\ \underline{52} 1 \overline{) 2} \\ \underline{51} 1 \overline{) 2} \\ \underline{50} 0 \overline{) 2} \\ \underline{49} 1 \overline{) 2} \end{array} \rightarrow (59)_{10} = \cancel{(11011100)} = (00110111)_2$$

$$b) \begin{array}{r} 59 \overline{) 2} \\ \underline{58} 29 \overline{) 2} \\ \underline{58} 28 \overline{) 2} \\ \underline{57} 14 \overline{) 2} \\ \underline{56} 14 \overline{) 2} \\ \underline{55} 7 \overline{) 2} \\ \underline{54} 0 \overline{) 2} \\ \underline{53} 6 \overline{) 2} \\ \underline{52} 3 \overline{) 2} \\ \underline{51} 1 \overline{) 2} \\ \underline{50} 2 \overline{) 2} \\ \underline{49} 1 \overline{) 2} \end{array} \rightarrow (59)_{10} = (00111011)_2$$

$$c) (255,46)_{10} =$$

$$\begin{array}{r} \overline{255} \text{ } | 2 \\ \underline{24} \\ 15 \\ \underline{14} \\ 1 \end{array} \quad \begin{array}{r} \overline{127} \text{ } | 2 \\ \underline{07} \\ 6 \\ \underline{6} \\ 0 \\ \underline{0} \\ 3 \\ \underline{2} \\ 1 \end{array} \quad \begin{array}{r} \overline{63} \text{ } | 2 \\ \underline{31} \\ 30 \\ \underline{15} \\ 14 \\ \underline{7} \\ 7 \\ \underline{6} \\ 1 \end{array} \quad \begin{array}{r} \overline{31} \text{ } | 2 \\ \underline{15} \\ 14 \\ \underline{7} \\ 7 \\ \underline{6} \\ 1 \end{array} \quad \begin{array}{r} \overline{15} \text{ } | 2 \\ \underline{7} \\ 7 \\ \underline{6} \\ 1 \end{array} \quad \begin{array}{r} \overline{7} \text{ } | 2 \\ \underline{3} \\ 3 \\ \underline{2} \\ 1 \end{array}$$

$$\rightarrow (255)_{10} = (11111111)_2$$

Como ya no quedan mas bits en el registro no vale la pena calcular la parte de la derecha de la coma.

2) Primero pasemos el número a binario.

$$\begin{array}{r} \overline{76} \text{ } | 2 \\ \underline{38} \\ 38 \\ \underline{16} \\ 22 \\ \underline{16} \\ 6 \\ \underline{6} \\ 0 \end{array} \rightarrow \begin{array}{r} \overline{38} \text{ } | 2 \\ \underline{19} \\ 18 \\ \underline{18} \\ 0 \end{array} \rightarrow \begin{array}{r} \overline{19} \text{ } | 2 \\ \underline{9} \\ 18 \\ \underline{9} \\ 9 \\ \underline{9} \\ 0 \end{array} \rightarrow \begin{array}{r} \overline{9} \text{ } | 2 \\ \underline{4} \\ 8 \\ \underline{4} \\ 4 \\ \underline{4} \\ 0 \end{array} \rightarrow \begin{array}{r} \overline{4} \text{ } | 2 \\ \underline{2} \\ 2 \\ \underline{2} \\ 0 \end{array} \rightarrow \begin{array}{r} \overline{2} \text{ } | 2 \\ \underline{1} \\ 1 \\ \underline{1} \\ 0 \end{array}$$

$$\therefore (76)_{10} = (\cancel{00101100})_2 = (01001100)_2$$

Ahora seguimos su complemento 2

$$01001100 \rightarrow 10010011 \rightarrow \begin{array}{r} 11 \\ 10110011 \\ + \quad 01 \\ \hline 10110100 \end{array}$$

El contenido del registro del microprocesador sera 10110100