

UNIDAD # 4

PARTE I

1) $\frac{210}{201,10}$

$$\begin{aligned} &= 2 \cdot 3^2 + 0 \cdot 3^1 + 1 \cdot 3^0 + 1 \cdot 3^{-1} \\ &= 18 + 0 + 1 + 0.333 \\ &= 19,333 // \end{aligned}$$

2) $\frac{143}{143}_{cs}$

$$\begin{aligned} &= 1 \cdot 5^2 + 4 \cdot 5^1 + 3 \cdot 5^0 \\ &= 25 + 20 + 3 \\ &= 48 // \end{aligned}$$

3) $\frac{12}{23,12}_{c4}$

$$\begin{aligned} &= 2 \cdot 4^1 + 3 \cdot 4^0 + 1 \cdot 4^{-1} + 2 \cdot 4^{-2} \\ &= 8 + 3 + 0.25 + 0.125 \\ &= 11,375 // \end{aligned}$$

4) $\frac{136}{136}_{10}$

$$\begin{aligned} &= 1 \cdot 10^2 + 3 \cdot 10^1 + 6 \cdot 10^0 \\ &= 100 + 30 + 6 \\ &= 136 // \end{aligned}$$

5) $\frac{147}{365,102}_{c7}$

$$\begin{aligned} &= 3 \cdot 7^2 + 6 \cdot 7^1 + 5 \cdot 7^0 + 1 \cdot 7^{-1} + 0 \cdot 7^{-2} + 2 \cdot 7^{-3} \\ &= 147 + 42 + 5 + 0.142 + 0 + 0.005 \\ &= 194,147 // \end{aligned}$$

6) $125,010_{10}$

$$= 1 \cdot 6^3 + 2 \cdot 6^2 + 5 \cdot 6^1 + 0 \cdot 6^0 + 1 \cdot 6^{-1} + 0 \cdot 6^{-2}$$

$$= 36 + 12 + 5 + 0 + 0.027 + 0$$

\Rightarrow decimal = $53,027_{10}$

7) $1001,1_{10}$

$$= 1 \cdot 2^4 + 0 \cdot 2^3 + 0 \cdot 2^2 + 1 \cdot 2^1 + 1 \cdot 2^0$$

$$= 16 + 0 + 0 + 2 + 1$$

$$= 19_{10}$$

8) $1101,101_{10}$

$$= 1 \cdot 2^5 + 1 \cdot 2^4 + 0 \cdot 2^3 + 1 \cdot 2^2 + 1 \cdot 2^1 + 0 \cdot 2^0 + 1 \cdot 2^{-1}$$

$$= 8 + 4 + 1 + 0.5 + 0.125$$

$$\approx 13.625_{10}$$

9) $1001,1001_{10}$

$$= 1 \cdot 2^5 + 0 \cdot 2^4 + 0 \cdot 2^3 + 1 \cdot 2^2 + 1 \cdot 2^1 + 0 \cdot 2^0 + 0 \cdot 2^{-1} + 1 \cdot 2^{-4}$$

$$= 8 + 0 + 0 + 1 + 0.5 + 0 + 0 + 0.0625$$

$$\approx 9.562_{10}$$

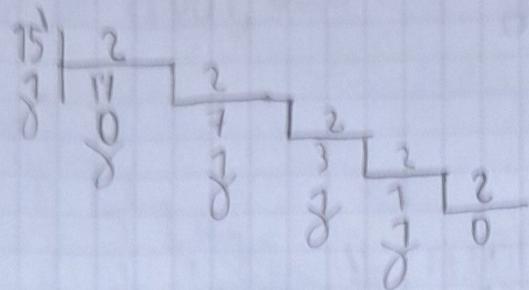
10) $110111,1101_{10}$

$$= 1 \cdot 2^8 + 1 \cdot 2^7 + 0 \cdot 2^6 + 1 \cdot 2^5 + 1 \cdot 2^4 + 1 \cdot 2^3 + 1 \cdot 2^2 + 1 \cdot 2^1 + 0 \cdot 2^0 + 1 \cdot 2^{-4}$$

$$= 32 + 16 + 0 + 4 + 2 + 1 + 0.5 + 0.25 + 0.0625$$

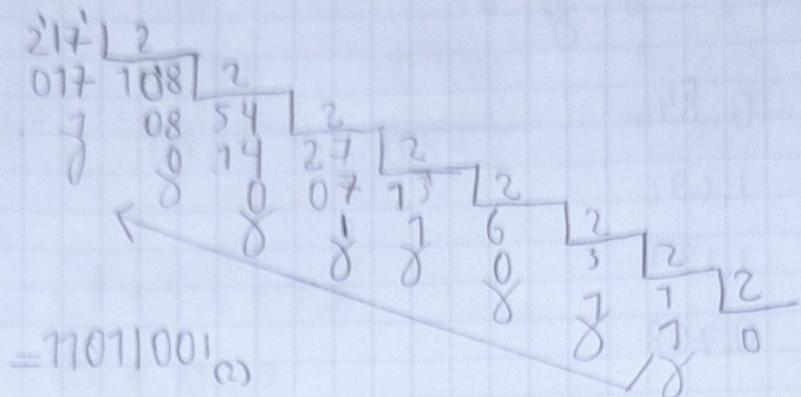
$$\approx 55.812_{10}$$

11) $15_{(10)}$

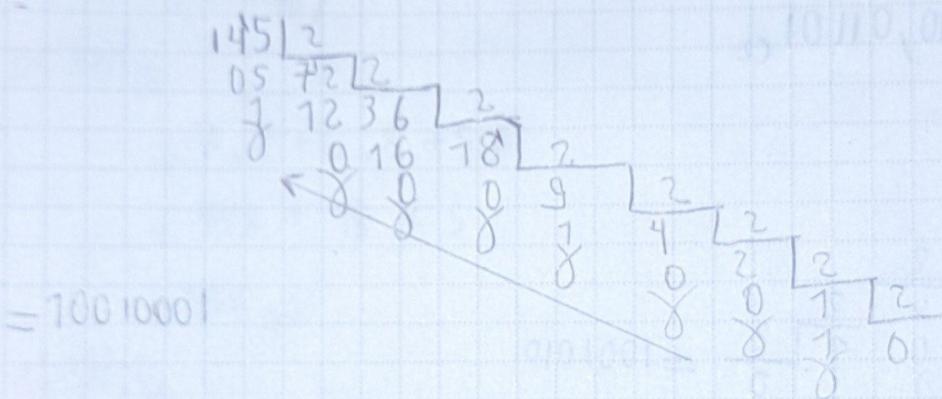


$$= 11101_2$$

12) $217_{(10)} = ?$



13) $145_{(2)}$



14) $0.1875_{(10)} = 0.0011_2$ ✓

$$0.1875 \times 2 = 0.3750$$

$$0.3750 \times 2 = 0.7500$$

$$0.7500 \times 2 = 1.5000$$

$$0.5000 \times 2 = 1.0000$$

Tema:

Fecha: / /

15) $74,423 = 1001010,01101_2$

$$\begin{array}{r} 74 \boxed{1} 2 \\ 14 \quad 37 \boxed{2} \\ \hline 0 \quad 17 \quad 18 \boxed{2} \\ \hline 8 \quad 8 \quad 9 \end{array} \begin{array}{r} 2 \\ \hline 4 \end{array} \begin{array}{r} 2 \\ \hline 8 \end{array} \begin{array}{r} 2 \\ \hline 0 \end{array} \begin{array}{r} 2 \\ \hline 8 \end{array} \begin{array}{r} 2 \\ \hline 0 \end{array} = 1001010$$

Parte Fraccionaria

$$0,423 \times 2 = 0,846$$

$$0,846 \times 2 = 1,692$$

$$0,692 \times 2 = 1,384$$

$$0,384 \times 2 = 0,768$$

$$0,768 \times 2 = 1,536 = 01101$$

16) $74,423 = 1001010,01101_2$

$$\begin{array}{r} 74 \boxed{1} 2 \\ 14 \quad 37 \boxed{2} \\ \hline 0 \quad 17 \quad 18 \boxed{2} \\ \hline 8 \quad 8 \quad 9 \end{array} \begin{array}{r} 2 \\ \hline 4 \end{array} \begin{array}{r} 2 \\ \hline 8 \end{array} \begin{array}{r} 2 \\ \hline 0 \end{array} \begin{array}{r} 2 \\ \hline 1 \end{array} \begin{array}{r} 2 \\ \hline 0 \end{array} = 1001010$$

Parte Fraccionaria

$$0,423 \times 2 = 0,846$$

$$0,846 \times 2 = 1,692$$

$$0,692 \times 2 = 1,384$$

$$0,384 \times 2 = 0,768$$

$$0,768 \times 2 = 1,536 = 01101$$

Tema:

Fecha:

$$17) 85,102 = 11001,0001$$

$$\begin{array}{r} 2512 \\ 05 \quad 12 \quad 2 \\ 8 \quad 8 \quad 6 \quad 2 \\ 8 \quad 8 \quad 3 \quad 2 \\ 8 \quad 8 \quad 1 \quad 2 \\ 8 \quad 8 \quad 0 \end{array} = 11001$$

$$\begin{array}{r} 0.102 \\ 0.204 \\ 0.408 \\ \hline 0.816 \end{array} = 0001$$

$$18) 359_{(8)}$$

$$= 3 \cdot 8^2 + 5 \cdot 8^1 + 9 \cdot 8^0$$

$$= 192 + 40 \cdot 4$$

$$= 236_{(10)} //$$

$$19) 765_{(8)}$$

$$= 7 \cdot 8^2 + 6 \cdot 8^1 + 5 \cdot 8^0$$

$$= 448 + 48 + 5$$

$$= 501_{(10)} //$$

$$20) 522,3_{(8)}$$

$$= 5 \cdot 8^2 + 2 \cdot 8^1 + 2 \cdot 8^0 + 3 \cdot 8^{-1}$$

$$= 320 + 16 + 2 + 0.375$$

$$= 338.375_{(10)} //$$

$$21) 702,102_{(8)}$$

$$= 7 \cdot 8^2 + 0 \cdot 8^1 + 2 \cdot 8^0 + 1 \cdot 8^{-1} + 0 \cdot 8^{-2} + 2 \cdot 8^{-3}$$

$$= 448 + 0 + 2 + 0.125 + 3.906$$

$$= 454.031_{(10)} //$$

22) $125,65_{(8)}$

$$= 1 \cdot 8^2 + 2 \cdot 8^1 + 5 \cdot 8^0 + 6 \cdot 8^{-1} + 5 \cdot 8^{-2}$$

$$= 64 + 16 + 5 + 0.75 + 0.078$$

Convertir de decimal a octal
 23) $1036_{(8)}$

$$\begin{array}{r} 1036.18 \\ 23 \quad 129 \quad 8 \\ 76 \quad 49 \quad 16 \quad 8 \\ \swarrow \quad \downarrow \quad \downarrow \quad \downarrow \\ 4 \quad 1 \quad 0 \quad 2 \quad 8 \\ 8 \quad 8 \quad 8 \quad 2 \quad 0 \end{array} = 2014_{(8)}$$

24) $760.33_{(8)}$

$$\begin{array}{r} 760.18 \\ 40 \quad 35 \quad 8 \\ 0 \quad 15 \quad 71 \quad 8 \\ \swarrow \quad \downarrow \quad \downarrow \quad \downarrow \\ 7 \quad 3 \quad 1 \quad 2 \quad 8 \\ 8 \quad 8 \quad 8 \quad 0 \end{array} = 1370.2507_{(8)}$$

$$\begin{array}{r} 0.33 \\ 8 \\ \hline 264 \\ 5.12 \\ 0.96 \\ \hline 7.68 \end{array}$$

25) $47253_{(8)}$

$$\begin{array}{r} 47253.18 \\ 72 \quad 59 \quad 7 \quad 8 \\ \swarrow \quad \downarrow \quad \downarrow \quad \downarrow \\ 8 \quad 7 \quad 7 \quad 0 \end{array}$$

$$\begin{array}{r} 0.53 \\ 8 \\ \hline 4.24 \\ 1.92 \\ \hline 7.36 \\ 2.88 \end{array}$$

$730,4172$

26) $105,793_{18}$

$$\begin{array}{r} 105 \longdiv{138} \\ 25 \quad 13 \quad 8 \\ \cancel{2} \quad \cancel{5} \quad 1 \quad 8 \\ \cancel{8} \quad \cancel{8} \quad 0 \end{array}$$

$$\begin{array}{r} 0.793 \\ 6.344 \\ \hline 0.793 \end{array}$$

$$\begin{array}{r} 2.334 \\ 2.752 \\ \hline 0.334 \end{array}$$

$$\begin{array}{r} 0.752 \\ 6.016 \\ \hline 0.752 \end{array}$$

$$\begin{array}{r} 0.016 \\ 0.128 \\ \hline 0.128 \end{array}$$

$$= 151,6260 //$$

Sistemas de numeración Hexadecimal

27) $3E8_{16}$

$$= 3 \cdot 16^2 + E \cdot 16^1 + 8 \cdot 16^0$$

$$= 768 + 224 + 8$$

$$= 1000_{10}$$

28) $A\bar{B}3,2\bar{1}_{16}$

$$= A \cdot 16^2 + \bar{B} \cdot 16^1 + 3 \cdot 16^0 + 2 \cdot 16^{-1} + 1 \cdot 16^{-2}$$

$$= 2560 + 176 + 3 + 0.125 + 0.00390625$$

$$= 2739.12890625_{10} //$$

29) $B\bar{C},\bar{7}_{16}$

$$= B \cdot 16^1 + \bar{C} \cdot 16^0 + 7 \cdot 16^{-1}$$

$$= 176 + 12 + 0.4375$$

$$= 188.4375_{10} //$$

30) $\bar{A}AB,\bar{C}$

$$= A \cdot 16^2 + \bar{A} \cdot 16^1 + B \cdot 16^0 + C \cdot 16^{-1}$$

$$= 10 \cdot 16^2 + 10 \cdot 16^1 + 11 \cdot 1 + 12 \cdot 16^{-1}$$

$$= 2560 + 160 + 11 + 0.75$$

$$= 2731.75_{10} //$$

Tema: _____
Fecha: / /

TOP

31) $1BF.A_{16}$

$$\begin{aligned} &= 1 \cdot 16^3 + B \cdot 16^2 + F \cdot 16^1 + A \cdot 16^0 \\ &= 256 + 176 + 15 + 0.625 \\ &= 447.625_{16} // \end{aligned}$$

Convertir de Decimal a Hexadecimal

32) 1994_{10}

$$\begin{array}{r} 1994 \\ \hline 16 \end{array} \quad \begin{array}{r} 124 \\ 16 \end{array} \quad \begin{array}{r} 7 \\ 16 \end{array} \quad = 7CA_{16} //$$

33) $4573,79_{16}$

$$\begin{array}{r} 4573,79_{16} \\ \hline 137 \end{array} \quad \begin{array}{r} 285 \\ 16 \end{array} \quad \begin{array}{r} 17 \\ 16 \end{array} \quad = 11DD, CA3_{16}$$

$$\begin{array}{r} 55 \\ 0,79 \\ \hline 16 \\ 12,69 \end{array} \quad \begin{array}{r} 42 \\ 0,64 \\ \hline 16 \\ 10,24 \end{array} \quad \begin{array}{r} 12 \\ 0,24 \\ \hline 16 \\ 3,84 \end{array}$$

34) $1035,54_{16}$

$$\begin{array}{r} 1035,54_{16} \\ \hline 75 \end{array} \quad \begin{array}{r} 69 \\ 16 \end{array} \quad \begin{array}{r} 10 \\ 16 \end{array} \quad = 40B, 8A3C$$

$$\begin{array}{r} 32 \\ 0,54 \\ \hline 16 \\ 3,29 \end{array} \quad \begin{array}{r} 32 \\ 0,64 \\ \hline 16 \\ 3,84 \end{array} \quad \begin{array}{r} 12 \\ 0,24 \\ \hline 16 \\ 7,44 \end{array} \quad \begin{array}{r} 52 \\ 0,84 \\ \hline 16 \\ 5,04 \end{array}$$

A B C

35) $5997.05_{16} = 1760.000_{10}$

$$\begin{array}{r} 5997.05 \\ 115 \longdiv{379} \\ \quad 30 \\ \quad 79 \\ \quad 77 \\ \quad 16 \\ \quad 13 \\ \quad 6 \\ \quad 7 \\ \quad 1 \\ \quad 16 \\ \hline 0 & 0 & 8 & 0 & 0 \end{array}$$

$$\begin{array}{r} 0.05 \\ \underline{-16} \\ -30 \\ \underline{05} \\ -080 \\ \underline{12.80} \\ c \\ \hline 12.80 \end{array}$$

$\frac{0.80}{16}$

$\frac{.4.80}{16}$

$\frac{0.80}{16}$

36) 825.345_{16}

$$\begin{array}{r} 825 \\ 25 \longdiv{151} \\ \quad 125 \\ \quad 26 \\ \quad 25 \\ \quad 16 \\ \hline 0 & 3 & 13 & 16 \\ & 0 & 3 & 13 & 16 \\ & 0 & 3 & 13 & 16 \\ & 0 & 3 & 13 & 16 \\ & 0 & 3 & 13 & 16 \\ \hline & & 0 & 0 & 0 \end{array}$$

$$\begin{array}{r} 0.345 \\ \underline{-16} \\ -20 \\ \underline{070} \\ 03.45 \\ \underline{5.520} \\ -08.320 \\ \hline 5.120 \end{array}$$

$\frac{0.320}{16}$

$\frac{1.920}{16}$

$\frac{3.20}{16}$

$\frac{5.120}{16}$

-339.585_{16}

Fin Parte 1