

1a)  $6,5_{10}$

$$\begin{array}{r} 6 \overline{) 12} \\ 0 \phantom{0} \underline{3} 2 \\ 11 \end{array}$$

$$\begin{array}{r} 0,5 \\ \cdot 2 \\ \hline 1,0 \end{array}$$

$(110, 1)_2$

$$\begin{array}{r} 110, 100 \\ 6 \phantom{0} \underline{1} 4 \end{array}$$

$(6, 4)_8$

$(6, 8)_{16}$

b)  $34,78_{10}$

$$\begin{array}{r} 1 \\ 0,78 \\ \cdot 2 \\ \hline 1,56 \end{array}$$

$$\begin{array}{r} 34 \overline{) 12} \\ 0 \phantom{0} \underline{17} 2 \end{array}$$

$$\begin{array}{r} 1,56 \\ \cdot 2 \\ \hline 3,12 \end{array}$$

$$\begin{array}{r} 0 \phantom{0} \underline{17} 2 \\ 1 \phantom{0} \phantom{0} \underline{8} 2 \end{array}$$

$$\begin{array}{r} 3,12 \\ \cdot 2 \\ \hline 6,24 \end{array}$$

$$\begin{array}{r} 1 \phantom{0} \phantom{0} \underline{8} 2 \\ 0 \phantom{0} \phantom{0} \phantom{0} \underline{4} 2 \end{array}$$

$$\begin{array}{r} 6,24 \\ \cdot 2 \\ \hline 12,48 \end{array}$$

$$\begin{array}{r} 0 \phantom{0} \phantom{0} \phantom{0} \underline{4} 2 \\ 0 \phantom{0} \phantom{0} \phantom{0} \phantom{0} \underline{2} 2 \end{array}$$

$$\begin{array}{r} 12,48 \\ \cdot 2 \\ \hline 24,96 \end{array}$$

2 2

$$\begin{array}{r} 0 \phantom{0} \phantom{0} \phantom{0} \phantom{0} \underline{1} \\ 0 \phantom{0} \phantom{0} \phantom{0} \phantom{0} \phantom{0} \underline{4} \end{array}$$

$$\begin{array}{r} 24,96 \\ \cdot 2 \\ \hline 49,92 \end{array}$$

$(100010, 110001)_2$

$(42, 61)_8$

$$\begin{array}{r} 49,92 \\ \cdot 2 \\ \hline 99,84 \end{array}$$

$$\begin{array}{r} 99,84 \\ \cdot 2 \\ \hline 199,68 \end{array}$$

$(22, C4)_{16}$

$$\begin{array}{r} 199,68 \\ \cdot 2 \\ \hline 399,36 \end{array}$$

$$\begin{array}{r} 399,36 \\ \cdot 2 \\ \hline 798,72 \end{array}$$

$$\begin{array}{r} 798,72 \\ \cdot 2 \\ \hline 1597,44 \end{array}$$

...

c)  $12,55_{10}$

$$\begin{array}{r} 12 \overline{) 12} \\ 0 \phantom{0} \underline{6} 2 \end{array}$$

$$\begin{array}{r} 0,55 \\ \cdot 2 \\ \hline 1,1 \end{array}$$

$(1100, 1001100)_2$

$(14, 46)_8$

$$\begin{array}{r} 0 \phantom{0} \underline{6} 2 \\ 0 \phantom{0} \phantom{0} \underline{3} 2 \\ 0 \phantom{0} \phantom{0} \phantom{0} \underline{1} 1 \end{array}$$

$$\begin{array}{r} 1,1 \\ \cdot 2 \\ \hline 2,2 \end{array}$$

$$\begin{array}{r} 1,2 \\ \cdot 2 \\ \hline 2,4 \end{array}$$

$$\begin{array}{r} 2,2 \\ \cdot 2 \\ \hline 4,4 \end{array}$$

$$\begin{array}{r} 2,4 \\ \cdot 2 \\ \hline 4,8 \end{array}$$

$$\begin{array}{r} 4,4 \\ \cdot 2 \\ \hline 8,8 \end{array}$$

$$\begin{array}{r} 4,8 \\ \cdot 2 \\ \hline 9,6 \end{array}$$

$$\begin{array}{r} 8,8 \\ \cdot 2 \\ \hline 17,6 \end{array}$$

$(C, 98)_{16}$



$$d) 2,70_{10}$$

$$0,70$$

$$\underline{2}$$

$$10,101100_2$$

$$\underline{1,40}$$

$$\underline{0,80}$$

$$2,54_8$$

$$\underline{1,60}$$

$$\underline{1,20}$$

$$2,80_{16}$$

$$\underline{0,40}$$

$$\underline{0,80}$$

$$l) 1,024_{10}$$

$$0,024$$

$$\underline{2}$$

$$1,000011000_2$$

$$\underline{0,048}$$

$$\underline{0,096}$$

$$1,0140_8$$

$$\underline{0,192}$$

$$\underline{0,384}$$

$$1,060_{16}$$

$$\underline{0,768}$$

$$\underline{1,536}$$

$$\underline{1,072}$$

$$\underline{0,144}$$

$$\underline{0,288}$$

$$\underline{0,576}$$

$$b) 12,30_{10}$$

$$12 \overline{) 12}$$

$$0,30$$

$$100,01001100_2$$

$$6 \overline{) 2}$$

$$\underline{.2}$$

$$14,230_8$$

$$3 \overline{) 2}$$

$$\underline{0,60}$$

$$\underline{1,20}$$

$$C,4C_{16}$$

$$\underline{0,40}$$

$$\underline{0,80}$$

$$\underline{1,60}$$

$$\underline{1,20}$$

$$\underline{0,40}$$

$$\underline{0,80}$$

$$2) a) 10001_2 \quad 00011000_2$$

$$\begin{array}{r} 111_2 \\ 00011000_2 \\ \underline{30_8} \\ 18_{16} \end{array}$$

$$b) 1011,101_2 \quad 00010101,1010_2$$

$$\begin{array}{r} 1010,000_2 \\ \underline{10101,101_2} \\ 25,5_8 \\ 15,A_{16} \end{array}$$

$$\begin{array}{r} 1 \quad 5 \quad A \\ 00010101,1010_2 \\ \underline{2 \quad 5 \quad 5} \end{array}$$

$$c) 5,20_{10} \quad C,31_{16} \quad 7,31_8$$

$$\begin{array}{r} 5 \overline{) 12} \quad 0,20 \quad 12 \cdot 16^0, 3 \cdot 16^{-1} + 1 \cdot 16^{-2} \\ \underline{1 \quad 2 \quad 2} \quad 2 \\ 0 \quad 1 \quad 0,40 \\ \underline{101,001_2} \quad 0,80 \quad 12,191_{10} \\ \quad \quad \quad 1,60 \quad \quad \quad 0,191 \\ \quad \quad \quad \quad \quad \quad 2 \end{array}$$

$$\begin{array}{r} 7 \cdot 8^0, 3 \cdot 8^{-1} + 1 \cdot 8^{-2} \\ 7,375 \\ + 0,015 \end{array}$$

$$\begin{array}{r} 1 \quad 1 \quad 1 \quad 1 \quad 1 \\ 1100,001 \\ + 101,001 \\ \hline 111,011 \quad 00011000,1010_2 \end{array}$$

$$11000,101_2 \quad 30,5_8$$

$$30,5_8$$

$$18,A$$

$$18,A_{16}$$

$$\begin{array}{r} 111,011_2 \\ \underline{0,780} \\ 1,560 \\ \underline{1,120} \end{array}$$

1

$$d) 110001_2$$

$$- 111_2$$

$$1010_2$$

$$\begin{matrix} 10_{10} \\ 12_8 \\ A_{16} \end{matrix}$$

$$2) 1011,101_2$$

$$1000,000_2$$

$$\begin{matrix} 0011,101_2 \\ 3,5_8 \\ 3,A_{16} \end{matrix}$$

$$\begin{matrix} 3 & A \\ 0011 & 1010_2 \\ 3 & 5 \end{matrix}$$

b) Resgatando da c,

$$C,31_{10} = 12,191_{10}$$

$$1100,001_2$$

$$7,31_8 = 7,390_{10}$$

$$111,011_2$$

$$50,20_{10}$$

$$50_{10}$$

$$0,2$$

$$110010,001_2$$

$$111$$

$$110010,001_2$$

$$1100,001_2$$

$$111,011_2$$

$$\begin{matrix} 110111,001_2 \\ 67,1_8 \\ 37,1_{16} \end{matrix}$$

$$\begin{matrix} 25 \downarrow 2 & 12 \downarrow 2 & 6 \downarrow 2 & 3 \downarrow 2 & 0,2 \\ 1 & 0 & 0 & 1 & 0,4 \\ & 0 & 0 & 1 & 0,8 \\ & & 1 & 1 & 1,6 \\ & & & 3 & 1,2 \\ & & & & 0,4 \end{matrix}$$



$$\begin{array}{r}
 g) \ 11101 \\
 \times \ 1101_2 \\
 \hline
 11101 \\
 10000 \\
 11101 \\
 11101 \\
 \hline
 \end{array}$$

$$\begin{array}{ccccccc}
 & 1 & & 7 & & 9 & \\
 & \overbrace{0001} & \overbrace{0101} & \overbrace{1110} & \overbrace{001} & & \\
 & 5 & 7 & 1 & 8 & & 
 \end{array}$$

$$\begin{array}{r}
 101111001_2 \\
 571_8 \\
 179_{16}
 \end{array}$$

$$h) \ 11010111_2 \ 1101_2$$

$$\begin{array}{r}
 101_1 \\
 00110
 \end{array}$$

$$101011_2$$

$$\begin{array}{r}
 2 \ B \\
 00101011
 \end{array}$$

$$101$$

$$00111$$

$$101$$

$$0101$$

$$101$$

$$0$$

$$101011_2$$

$$53_8$$

$$2B_{16}$$

$$3) \ 2019 \ 3023409$$

$$0100 \ 1011 \ 0011 \ 1001 \ 1001 \ 0001 \ 0101 \ 1011 \ 0001_2$$

$$0010000000110010011000000100011010000001001_{BCD}$$

O número em binária é mais compacto



4) ALEXANDRE

$41_{16}$   $4C_{16}$   $45_{16}$   $58_{16}$   $41_{16}$   $4E_{16}$   $44_{16}$   $52_{16}$   $45_{16}$

01000001 01001100 01000101 01010100 01000001 01000110  
01000100 01010010 00001010<sub>2</sub>