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1) $127_{(10)} = 1111111_{(2)}$ / $127_{(10)} = 177_{(8)}$ / $127_{(10)} = 7F_{(16)}$

a)

127 | 2
1 63 | 2
1 31 | 2
1 15 | 2
1 7 | 2
1 3 | 2
1 1

127 | 8
7 15 | 8
7 1

127 | 16
15 7

---

b) $345_{(10)} = 101011001_{(2)}$ / $345_{(10)} = 531_{(8)}$ / $345 = 159_{(16)}$

343 | 2
1 171 | 2
1 85 | 2
1 42 | 2
0 21 | 2
1 10 | 2
0 5 | 2
1 2 | 2
0 1

345 | 8
1 43 | 8
3 5

345 | 16
9 21 | 16
5 1

---

c) $456 = 111001000_{(2)}$ / $456 = 710_{(8)}$ / $456 = 1C8_{(16)}$

456 | 2
0 228 | 2
0 114 | 2
0 57 | 2
1 28 | 2
0 14 | 2
0 7 | 2
1 3 | 2
1 1

456 | 8
0 57 | 8
1 7

456 | 16
8 28 | 16
12 1

d) $654 = 1010001110_{(2)}$ / $654 = 1216_{(8)}$ / $654 = 28E_{(16)}$

654 | 2
0 327 | 2
1 163 | 2
1 81 | 2
1 40 | 2
0 20 | 2
0 10 | 2
0 5 | 2
1 2 | 2
0 1

654 | 8
6 81 | 8
1 10 | 8
2 1

654 | 16
14 40 | 16
8 2

---

e) $321 = 101000001_{(2)}$ / $321 = 501_{(8)}$ / $321 = 141_{(16)}$

321 | 2
1 160 | 2
0 80 | 2
0 40 | 2
0 20 | 2
0 10 | 2
0 5 | 2
1 2 | 2
0 1

321 | 8
1 40 | 8
0 5

321 | 16
1 20 | 16
4 1

---

f) $65 = 1000001_{(2)}$ / $65 = 101_{(8)}$ / $65 = 41_{(16)}$

65 | 2
1 32 | 2
0 16 | 2
0 8 | 2
0 4 | 2
0 2 | 2
0 1

65 | 8
1 8 | 8
0 1

65 | 16
1 4

---

g) $228 = 11100100_{(2)}$ / $228 = 344_{(8)}$ / $228 = E4_{(16)}$

228 | 2
0 114 | 2
0 57 | 2
1 28 | 2
0 14 | 2
0 7 | 2
1 3 | 2
1 1

228 | 8
4 28 | 8
4 3

228 | 16
4 14

h) $111 = 1101111_{(2)}$ / $111 = 157_{(8)}$ / $111 = 6F_{(16)}$

111 | 2
1 55 | 2
1 27 | 2
1 13 | 2
1 6 | 2
0 3 | 2
1 1

111 | 8
7 13 | 8
5 1

111 | 16
15 6

---

i) $256 = 100000000_{(2)}$ / $256 = 400_{(8)}$ / $256 = 100_{(16)}$

256 | 2
0 128 | 2
0 64 | 2
0 32 | 2
0 16 | 2
0 8 | 2
0 4 | 2
0 2 | 2
0 1

256 | 8
0 32 | 8
0 4

256 | 16
0 16 | 16
0 1

---

j) $318 = 100111110_{(2)}$ / $318 = 476_{(8)}$ / $318 = 13E_{(16)}$

318 | 2
0 159 | 2
1 79 | 2
1 39 | 2
1 19 | 2
1 9 | 2
1 4 | 2
0 2 | 2
0 1

318 | 8
6 39 | 8
7 4

318 | 16
14 19 | 16
3 1

EX02

Tabela de conversão binária → decimal

2^{10}	2^9	2^8	2^7	2^6	2^5	2^4	2^3	2^2	2^1	2^0
1024	512	256	128	64	32	16	8	4	2	1

a) $1110011_{(2)} = 115_{(10)}$

1 1 1 0 0 1 1

$\underline{2^6} + \underline{2^5} + \underline{2^4} + 2^3 + 2^2 + \underline{2^1} + \underline{2^0} = 115$

$2^6 + 2^5 + 2^4 + 2^1 + 2^0 = 64 + 32 + 16 + 2 + 1 = 115$

b) $1010100_{(2)} = 84_{(10)}$

1 0 1 0 1 0 0

$\underline{2^6} + 2^5 + \underline{2^4} + 2^3 + \underline{2^2} + 2^1 + 2^0 = 84$

c) $111100_{(2)} = 60_{(10)}$

1 1 1 1 0 0

$\underline{2^5}\ \underline{2^4}\ \underline{2^3}\ \underline{2^2}\ 2^1\ 2^0 = 60$

d) $1000001_{(2)} = 65_{(10)}$

1 0 0 0 0 0 1

$\underline{2^6}\ 2^5\ 2^4\ 2^3\ 2^2\ 2^1\ \underline{2^0} = 65$

e) $1001001_{(2)} = 73_{(10)}$

1 0 0 1 0 0 1

$\underline{2^6}\ 2^5\ 2^4\ \underline{2^3}\ 2^2\ 2^1\ \underline{2^0} = 73$

f) $11001100_{(2)} = 204_{(10)}$

1 1 0 0 1 1 0 0

$\underline{2^7}\ \underline{2^6}\ 2^5\ 2^4\ \underline{2^3}\ \underline{2^2}\ 2^1\ 2^0 = 204$

Exo3

a) $137_{(8)} + 1101_{(2)} \Rightarrow 95_{(10)} + 13_{(10)} = 108$

b) $137_{(16)} + 101_{(2)} \Rightarrow 311_{(10)} + 5_{(10)} = 316$

c) $AF_{(16)} + 101_{(2)} \Rightarrow 175_{(10)} + 5_{(10)} = 180$

d) $8C_{(16)} - 37_{(8)} \Rightarrow 140_{(10)} - 31_{(10)} = 109$

e) $125_{(8)} - 1101_{(2)} \Rightarrow 85_{(10)} - 13_{(10)} = 72$

f) $13_{(8)} + E_{(16)} \Rightarrow 11_{(10)} + 14_{(10)} = 25$

g) $A3F_{(16)} + 1111_{(2)} \Rightarrow 2623_{(10)} + 15_{(10)} = 2638$

h) $AAA_{(16)} + 55_{(8)} \Rightarrow 2730_{(10)} + 45_{(10)} = 2775$

Exo3

a) $137_{(8)} + 1101_{(2)} \Rightarrow 95_{(10)} + 13_{(10)} = 108_{(10)}$
$\Rightarrow 1011111_{(2)} + 1101_{(2)} = 1101100_{(2)}$

b) $137_{(16)} + 101_{(2)} \Rightarrow 311_{(10)} + 5_{(10)} = 316_{(10)}$
$\Rightarrow 100111011_{(2)} + 101_{(2)} = 100111100_{(2)}$

c) $AF_{(16)} + 101_{(2)} \Rightarrow 175_{(10)} + 5_{(10)} = 180_{(10)}$
$\Rightarrow 10101111_{(2)} + 101_{(2)} = 10110100_{(2)}$

d) $8C_{(16)} - 37_{(8)} \Rightarrow 140_{(10)} - 31_{(10)} = 109_{(10)}$
$\Rightarrow 10001100_{(2)} - 11111_{(2)} = 1101101_{(2)}$

e) $125_{(8)} - 1101_{(2)} \Rightarrow 85_{(10)} - 13_{(10)} = 72_{(10)}$
$\Rightarrow 1010101_{(2)} - 1101_{(2)} = 1001000_{(2)}$

f) $13_{(8)} + E_{(16)} \Rightarrow 11_{(10)} + 14_{(10)} = 25_{(10)}$
$\Rightarrow 1011_{(2)} + 1110_{(2)} = 11001_{(2)}$

g) $A3F_{(16)} + 1111_{(2)} \Rightarrow 2623_{(10)} + 15_{(10)} = 2638$
$\Rightarrow 101000111111_{(2)} + 1111_{(2)} = 101001001110_{(2)}$

h) $AAA_{(16)} + 55_{(8)} \Rightarrow 2730_{(10)} + 45_{(10)} = 2775$
$\Rightarrow 101010101010_{(2)} + 101101_{(2)} =$
$101011010111_{(2)}$