Sistemas

1) a] 111 01010

b] 10101011

c]

d] 10011000

e] $2^{15} \rightarrow 1000000000000000$

2) a] 256 $[2^8]$

b] 756

c] 157

d] 2047 $[2^{11}-1]$

$2^{10}\ 2^9\ 2^8\ 2^7\ 2^6\ 2^5$
$2^4\ 2^3\ 2^2\ 2^1\ 2^0$

3) a) 45A0 = 0100 0101 1010 0000

b) CF = 1100 1111

c) AAB2 = 1010 1010 . 1011 0010

d) 3020 = 0011 0000 0010 0000

4) a) 1000 1000 = 136

b) 0000 1010 = 10

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

555 | 2
1 277 | 2
1 138 | 2
0 69 | 2
1 34 | 2
0 17 | 2
1 8 | 2
0 4 | 2
0 2 | 2
0 1

$1x^{10} + 1x^9 + 1x^8 + 1x^7 + 1x^6 + 1x^5 + 1x^4 + 1x^3 + 1x^2 + 1x^1 + 1x^0$

5) a] 11000 1000 → 610

10001 0110 → 426

b] 3020 → 011 000 010 000

6)

Binary	Decimal	Hexadecimal	Octal
100001	33	21	41
11111111	2^8-1 = 255	FF	377

10001 = 377

7) 46 → 0100 0110 → 7 bits (1 byte)

4AAA → 0100 1010 1010 1010 → 15 bits (2 bytes)

FF4F → 1111 1111 0100 1111 → 20 bits

345F → 0011 0100 0101 1111 → 16 bits

100	256	255	32	31	3	4350	625	45
1100100	100000000	11111111	100000	11111	11	1000011111110	1001110001	101101
7 bits	9 bits	8 bits	6 bits	5 bits	2 bits	12 bits	11 bits	6 bits

2^{30} ?

63 → 111111 → 6 bits

8) hola Mundo!

68 6F 6C 61 20 4D 75 6E 64 6F 21

1101000 1101111 1101100 1100001 0100000 1001101 1110101 1101110 1100100 1101111 0100001

7 bits 7

1 byte