+ o + o 1

Convertir a decimal los sig. Numeros binarios

a) $110011,11_2$ = $2^5\ 2^4\ 2^3\ 2^2\ 2^1\ 2^0\ \ 2^{-1}\ 2^{-2}$

1 1 0 0 1 1 , 1 1

$32+16+0+0+2+1 \quad \frac{1}{2^1}+\frac{1}{2^2} = 51,22$

$+\ \frac{1}{2}+\frac{1}{4} = 51.75$ //

$2^0=1$
$2^1=2$
$2^2=4$
$2^3=8$
$2^4=16$
$2^5=32$
$2^6=64$
$2^7=128$
$2^8=256$

b) $2^5\ 2^4\ 2^3\ 2^2\ 2^1\ 2^0\ \ 2^{-1}\ 2^{-2}$

1 0 1 0 1 0 . 0 1

$32+0+8+0+2+0+0+\frac{1}{4}$

42.25

c) $2^6\ 2^5\ 2^4\ 2^3\ 2^2\ 2^1\ 2^0\ \ 2^{-1}\ 2^{-2}\ 2^{-3}$

1 0 0 0 0 0 . 1 . 1 1 1

$64 + 0 + 1 + .5 + .25 + .125$

65.875 //

d) $2^6\ 2^5\ 2^4\ 2^3\ 2^2\ 2^1\ 2^0\ \ 2^{-1}\ 2^{-2}\ 2^{-3}$

1 1 1 1 0 0 0 . 1 0 1

$64+32+16+8+0 \quad + .625$

120.625 //

e) $2^6\ 2^5\ 2^4\ 2^3\ 2^2\ 2^1\ 2^0\ \ 2^{-1}\ 2^{-2}\ 2^{-3}\ 2^{-4}\ 2^{-5}$

1 0 1 1 1 1 0 0 . 1 0 1 0 1

$64+0+16+8+4 \quad +0 \quad .5 + .125 + .0312$

92.656

f)

2^6	2^5	2^4	2^3	2^2	2^1	2^0		2^{-1}	2^{-2}	2^{-3}	2^{-4}
1	1	1	0	0	0	1	.	0	0	0	1

$64 + 32 + 16 + 1 \qquad + .062$

113.062_{10} //

g)

2^6	2^5	2^4	2^3	2^2	2^1	2^0		2^{-1}	2^{-2}	2^{-3}	2^{-4}
1	0	1	1	0	1	0	.	1	0	1	0

$64 + 16 + 8 + 2 \qquad .5 + .125$

88.625_{10} //

h)

2^6	2^5	2^4	2^3	2^2	2^1	2^0		2^{-1}	2^{-2}	2^{-3}	2^{-4}	2^{-5}
1	1	1	1	1	1	1	.	1	1	1	1	1

$64 + 32 + 16 + 8 + 4 + 2 + 1 \qquad .5 + .25 + .125 + .062 + .031$

127.968

Foto 2

Convertir a binario los sig decimales

a) 15

	Residuo
15/2	1
7/2	1
3/2	1
1	1

$= 1111_2$

$2\overline{)15}$ 7, 14, 1 — $2\overline{)7}$ 3, 6, 1 — $2\overline{)3}$ 1, 2, 1

b) 21

	Residuo
21/2	1
10/2	0
5/2	1
2/2	0
1	1

$= 10101_2$

16 8 4 2 1

$2\overline{)21}$ 10, 20, 1 — $2\overline{)10}$ 5, 10, 0 — $2\overline{)5}$ 2, 4, 1 — $2\overline{)2}$ 1, 2, 0

c) 28

	Residuo
28/2	0
14/2	0
7/2	1
3/2	1
1	1

$= 11100_2$

$2\overline{)28}$ 14, 28, 0 — $2\overline{)14}$ 7, 14, 0 — $2\overline{)8}$ 4, 8, 0 — $2\overline{)4}$ 2, 4, 0 — $2\overline{)2}$ 1, 2, 0

d) 34

	Residuo
34/2	0
17/2	1
8/2	0
4/2	0
2/2	0
1	1

$= 100010_2$

$2\overline{)34}$ 17, 34, 0 — $2\overline{)17}$ 8, 16, 1 — $2\overline{)8}$ 4, 8, 0 — $2\overline{)4}$ 2, 4, 0 — $2\overline{)2}$ 1, 2, 0

e)

	Residuo
40/2	0
20/2	0
10/2	0
5/2	1
2/2	0
1	1

$= 101000$

$2\overline{)59}$ = 29; 58; 1

$2\overline{)29}$ = 14; 28; 1

f) 59

	Residuo	
59/2	1	1
29/2	1	2
14/2	0	4
7/2	1	8
3/2	1	16
1	1	32

$= 111011_2$

g) 65

	Residuo
65/2	1
32/2	0
16/2	0
8/2	0
4/2	0
2/2	0
1	1

$= 1000001_2$ //

h) 73

	Residuo	
73/2	1	1
36/2	0	2
18/2	0	4
9/2	1	8
4/2	0	16
2/2	0	32
1	1	64

$= 1001001_2$ //

Foto 3

Convertir a decimal los sig Num octales

a) 12_8 = 8^1 8^0 / 1 2 $= (1 \times 8^1) + (2 \times 8^0) = 8 + 2 = 10$

b) 27_8 = 8^1 8^0 / 2 7 $= (2 \times 8^1) + (7 \times 8^0) = 16 + 7 = 23$

c) 56_8 = 8^1 8^0 / 5 6 $= (5 \times 8^1) + (6 \times 8^0) = 40 + 6 = 46$

d) 64_8 = 8^1 8^0 / 6 4 $= (6 \times 8^1) + (4 \times 8^0) = 48 + 4 = 52$

e) 103_8 = 8^2 8^1 8^0 / 1 0 3 $= (1 \times 8^2) + (0 \times 8^1) + (3 \times 8^0) = 64 + 3 = 67$

f) 557_8 = 8^2 8^1 8^0 / 5 5 7 $= (5 \times 8^2) + (5 \times 8^1) + (7 \times 8^0) = 320 + 40 + 7$
$= 367$

g) 163_8 = 8^2 8^1 8^0 / 1 6 3 $= (1 \times 64) + (6 \times 8) + (3 \times 1) = 64 + 48 + 3 = 115$

h) 1024_8 = 8^3 8^2 8^1 8^0 / 1 0 2 4 $= (1 \times 512) + (0 \times 64) + (2 \times 8) + (4 \times 1) = 512 + 16 + 4 = 532$

i) 7765_8 = 8^3 8^2 8^1 8^0 / 7 7 6 5 $= (7 \times 512) + (7 \times 64) + (6 \times 8) + (5 \times 1) = 3584 + 448 +$
$48 + 5$
$= 4085$

Convertir a octal los sig decimales

a) 15

$8 \overline{)15}$ → 1, $\frac{8}{7}$

	Residuo
15/8	7
1	1

$= 17_8$

b) 27

$8 \overline{)27}$ → 3, $\frac{24}{3}$

	Residuo
27/8	3
3	3

$= 33_8$

c) 46

	Residuo
46/8	6
5	5

$= 56_8$

D) 70

	Residuo
70/8	6
8/8	0
1	1

$= 106_{10}$

Foto 3 — decimal - octal

713	15	79	97
8	8	8	8
104	120	152	136

e) 100_{10}

	Residuo
100/8	4
12/8	4
1	1

$= 144_8$

f) 142_{10}

	Residuo
142/8	6
17/8	1
2	2

$= 216_8$

g) 219

	Residuo
219/8	3
27/8	3
3	3

$= 333_8$

h) 435

	Residuo
435/8	3
54/8	6
6	6

$= 663_8$

Convertir a binario los sig. Num. octales

a) $13_8 = \underset{001}{1}\ \underset{011}{3} = 1011_2$

b) $57_8 = \underset{101}{5}\ \underset{111}{7} = 101111_2$

c) $101_8 = \underset{001}{1}\ \underset{000}{0}\ \underset{001}{1} = 100001_2$ //

d) $321_8 = \underset{011}{3}\ \underset{010}{2}\ \underset{001}{1} = 11010001_2$

e) $540_8 = \underset{101}{5}\ \underset{100}{4}\ \underset{000}{0} = 101100000$

f) $4653_8 = \underset{100}{4}\ \underset{110}{6}\ \underset{101}{5}\ \underset{011}{3} = 100110101011$

g) $13271_8 = \overset{1}{001}\ \overset{3}{011}\ \overset{2}{010}\ \overset{7}{111}\ \overset{1}{001} = 001011010111001$

h) $4S600_8 = \overset{4}{100}\ \overset{S}{101}\ \overset{6}{110}\ \overset{0}{000}\ \overset{0}{000} = 1001011100000000$

i) $100213_8 = \overset{1}{001}\ \overset{0}{000}\ \overset{0}{000}\ \overset{2}{010}\ \overset{1}{001}\ \overset{3}{011} = 1000000010001011_2$

Convertir a octal los s.g binarios

a) $111 = \overset{7}{111} = 7_8$

b) $10 = 010 = 2$

c) $110111 = \overset{6}{110}\ \overset{7}{111} = 67$

d) $101010 = \overset{5}{101}\ \overset{2}{010} = 52$

e) $1100 = \overset{1}{001}\ \overset{4}{100} = 14$

f) $1011110 = \overset{1}{001}\ \overset{3}{011}\ \overset{6}{110} = 136$

g) $101100011001 = \overset{5}{101}\ \overset{4}{100}\ \overset{3}{011}\ \overset{1}{001} = 5431$

h) $1011000011 = \overset{2}{010}\ \overset{6}{110}\ \overset{0}{000}\ \overset{3}{011} = 2603$

i) $111111101111000 = \overset{7}{111}\ \overset{7}{111}\ \overset{5}{101}\ \overset{7}{111}\ \overset{0}{000} = 77570$