137

$1 \cdot 10^2 +$
$3 \cdot 10^1 +$
$7 \cdot 10^0$

0 1 2 3 4 5 6 7 8 9
10 11 12 13 14 15 16 17 18 19
20 21 22 · - - - · 29
30 31 32 - - - · 39
40 - - 49
50 - · 59
60 ⋮
70 ⋮
80 ⋮
90 - - - 99

100 101 102 - - - 109
110 111 112 119
120 - - 129
130 131 132 133 134 135 136 137 138 139 ←

137

Base 8 dígitos $0,1,2,3,4,5,6,7$

De izquierda a derecha

$137 = a_n 8^n + \dots + a_2 8^2 + a_1 8 + a_0$

Potencias de 8

8^2	8^3	8^4	8^5
1	8	64	512	4096	32768

137

Vamos a necesitar 3 cifras

$137 = a_2 8^2 + a_1 8^1 + a_0 8^0$

$a_2 \cdot 64 + a_1 \cdot 8 + a_0 \cdot 1$

$0 \cdot 64$

$1 \cdot 64$

$2 \cdot 64 = 128$ ← 137

$3 \cdot 64 = 192$

$\Rightarrow a_2 = 2$

$137 = 2 \cdot 64 + a_1 \cdot 8 + a_0$

$137 - 128 = a_1 8 + a_0$

$9 = a_1 \cdot 8 + a_0$

$a_1 = 1$

$9 - 8 = a_0$

$1 = a_0$

donde $a_0, a_1, a_2 \in \{0, \dots, 7\}$

2 { 8×8, 8×8

1 — 8

1 • 1

$137 = 211_{(8)}$

$0 \cdot 8$

$1 \cdot 8 < 9$

$2 \cdot 8 = 16$

137 en base 8

De derecha a izquierda

137	8		
8	17	8	
57	16	2	8
1	1		0
↑	↑	2	
		↑	

$137 = 211_{(8)}$

$137 = a_2 \cdot 8^2 + a_1 \cdot 8 + a_0$

$0 \leq a_0 \leq 7$

el cociente (7) y el resto (r) son únicos

$137 = 17 \cdot 8 + 1$ $\qquad$ $(a_2 \cdot 8 + a_1) 8 + a_0$

$\Downarrow$

$17 = a_2 \cdot 8 + a_1$, $1 = a_0$

$2 \cdot 8 + 1$

$\Downarrow$

$a_2 = 2$, $a_1 = 1$

$2 = 0 \cdot 8 + 2$

137 en base 16

bases :	digits
2	0, 1
4	0, 1, 2, 3
8	0, 1, 2, 3, 4, 5, 6, 7
10	0, 1, 2, 3, 4, 5, 6, 7, 8, 9
16	0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, F

A = "10"
B = "11"
C = "12"
D = "13"
E = "14"
F = "15"

137 | 16
128 8 | 16
9 8 0
8

137 = 89 (16)

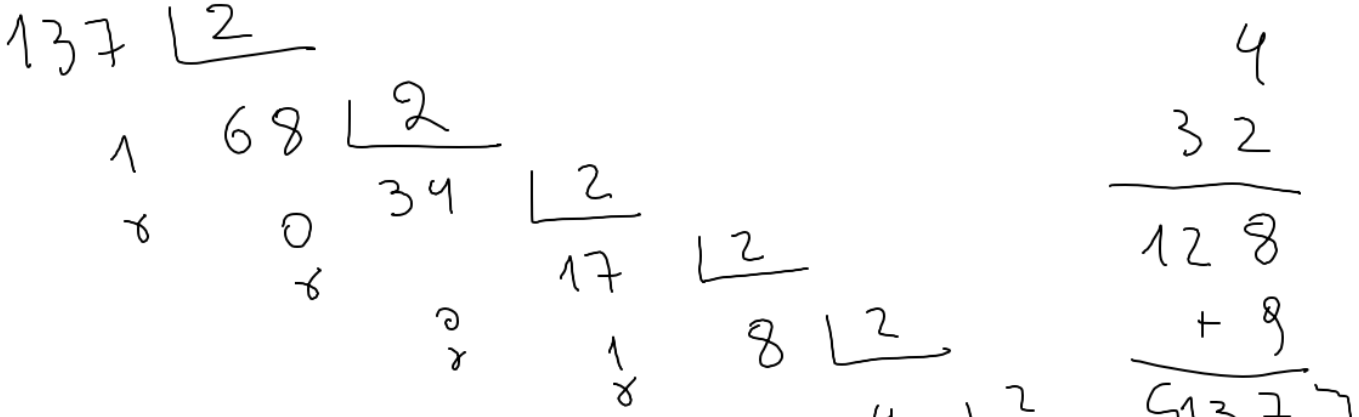
138 = 8A (16)

$$
\begin{array}{r|l}
143 & 16 \\
128 & 8 \\
\hline
15 & 8 \\
\cancel{8} & \cancel{8}
\end{array}
\qquad
\begin{array}{r|l}
8 & 16 \\
\hline
0 &
\end{array}
$$

$$143 = 8F_{(16)}$$

$$142 = 8E_{(16)}$$

$$140 = 8C_{(16)}$$



0	0000
1	0001
2	0010
3	0011
4	0100
5	0101
6	0110
7	0111
8	1000
9	1001
A	1010
B	1011
C	1100
D	1101
E	1110
F	1111

$137 = 1000\ 1001_{(2)}$

$= 211_{(8)}$

$= 89_{(16)}$

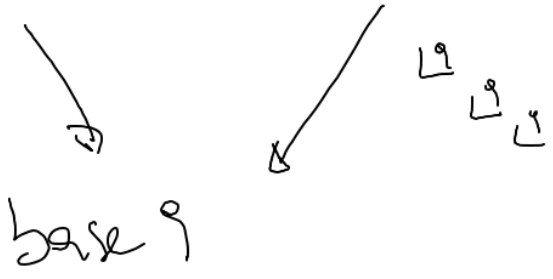
$137 = 49_{(32)}$

$4 \cdot 32^1 + 9 \cdot 32^0$

49

potencias

base 32 ⟶ base 10 137



$1C2B_{(16)} = 1 \cdot 16^3 + 12 \cdot 16^2 + 2 \cdot 16^1 + 11$

$12 = C$

$11 = B$

$1110000101010_{(2)}$

$A \cdot 1 = A$

$A \cdot 2 = 14$