

base 2 unsigned

$$10101101 = 2^8 + 2^6 + 2^4 + 2^3 + 2^2 + 2^0 = 256 + 64 + 16 + 8 + 4 + 1 = 349$$

base 16 = 2^4 → groups of 4

15D ← 10101101

349₍₁₀₎ → ?₍₁₆₎

check: 15D₍₁₆₎ = $1 \cdot 16^2 + 5 \cdot 16 + 13 = 256 + 80 + 13 = 349$ ✓

base 2

0001	-1
0010	-2
0011	-3
...	...
1111	-F

base 8 = 2^3 → groups of 3

535 ← 10101101

check 535₍₈₎ = $5 \cdot 8^2 + 3 \cdot 8^1 + 5 = 320 + 24 + 5 = 349$ ✓

base 2

base 4 = 2^2 → groups of 2

11131 ← 10101101

check: 11131₍₄₎ = $1 \cdot 4^4 + 1 \cdot 4^3 + 1 \cdot 4^2 + 3 \cdot 4^1 + 1 = 256 + 64 + 16 + 12 + 1 = 349$ ✓

question

11131₍₄₎ = ? anything smart

bits (4) ↔ 2₍₈₎

$$72101_{(9)} = ?$$

(3)

$$\boxed{\text{Hint: } 3^2 = 9}$$

every digit in base 9 $\Rightarrow$ 2 digits in base 3.

--|1--|1--|00|-- ~ base 3