

# Decimal $\rightarrow$ Bin / Hex

Tuesday, September 29, 2015  
10:31 AM

$$\begin{aligned}
 321_4 &= \frac{3}{4^2} \frac{2}{4^1} \frac{1}{4^0} \\
 &= 3 \times 4^2 + 2 \times 4 + 1 \\
 &= 48 + 8 + 1 \\
 &= 57_{10}
 \end{aligned}$$

$279_{10} \rightarrow$  base 4 *mult by base*

$$\begin{aligned}
 279 / 4 &= 69.75 \\
 69 / 4 &= 17.25 \\
 17 / 4 &= 4.25 \\
 4 / 4 &= 1.00 \\
 1 / 4 &= 0.25
 \end{aligned}$$

whole number	remainder
69	3
17	1
4	1
1	0
0	1

$$279_{10} = 10113_4$$

$3954_{10} \rightarrow$  hex

1 2 3 4 5 6 7 8 9 A B C D E F

$$\begin{aligned}
 3954 / 16 &= 247.125 \\
 247 / 16 &= 15.4375 \\
 15 / 16 &= 0.9375
 \end{aligned}$$

whole	remainder
247	2
15	7
0	<del>15</del> = F

$$3954_{10} = F72_{16}$$

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binary  $\rightarrow$  hex

(this one's cool!)

$01001110_2 \rightarrow$  hex

$$0100_2 = 4_{10} = 4_{16}$$

$$1110_2 = 14_{10} = E_{16}$$

so  $01001110_2 = 4E_{16}$