

Cristian Ornelas
Manual work

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Unsigned decimal 100 \rightarrow hex

$$\begin{array}{r} 100 \\ \wedge \quad \wedge \\ 6 \quad 4 \\ \wedge \quad \wedge \\ 0 \quad 6 \end{array} = \boxed{64 \text{ hex}}$$

hex 64 $\xrightarrow{\text{binary}}$ 0000 0000 0110 0100

$$\begin{array}{ccc} 001 & 100 & 100 \\ \hline & 144 & \text{octal} \end{array}$$

Unsigned decimal 253 \rightarrow hex

$$\begin{array}{r} 253 \\ \wedge \quad \wedge \\ 15 \quad 13 \\ \wedge \quad \wedge \\ 0 \quad 15 \end{array} \quad \boxed{FD \text{ hex}}$$

hex FD \rightarrow binary 0000 0000 1111 1101

$$\begin{array}{ccc} \dots & 000 & 011 & 111 & 101 \\ \hline & 3 & 7 & 5 & \text{octal} \end{array}$$

hex 41D0 \rightarrow binary 0100 0001 1101 0000

$$\begin{array}{l} 1, 2, 4, 8, 16, 32, 64+1=65, 130+1=131, \\ 262+1=263, 526, 1052+1=1053, \\ 2, 106, 4, 212, 8, 424, 16, 848 \end{array}$$

binary \rightarrow signed decimal 1111 1111 1111 1100

(2's complement)

$$\begin{array}{r} 0000 0000 0000 0011 \\ + \quad \quad \quad \quad \quad \quad \quad 1 \\ \hline \end{array}$$

$$\boxed{0000 0000 0000 0100} = -4$$

* signed decimal