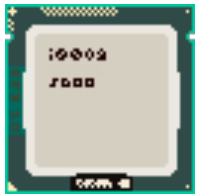


# Hexadecimal / Decimal



BytesOfProgress

Converting Decimal to Hexadecimal:  $239_{10} \rightarrow X_{16}$

The Hexadecimal system has 16 numbers: It ranges from 0 to 15, or from 0 to F:  
1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, F.

$$239 : 16 = 14,9375 \quad | \quad 239 - 16 \cdot 14 = 15 = \underline{F}$$

$$14 : 16 = 0,875 \quad | \quad 14 - 16 \cdot 0 = 14 = \underline{E}$$

EF<sub>16</sub>

Converting Hexadecimal to Decimal:  $EF_{16} \rightarrow X_{10}$

This works similarly to converting from binary to decimal. We write down the bits, fill in the hexadecimal number and add up.

1)

$16^3$	$16^2$	$16^1$	$16^0$
4096	256	16	1
		E	F

$$\begin{array}{l} 2) \quad 15 \cdot 1 = 15 \\ \quad 16 \cdot 14 = \underline{224} \end{array}$$

$$\begin{array}{r} 3) \quad 224 \\ + \quad 15 \\ \hline \underline{239}_{10} \end{array}$$

$$EF_{16} = \underline{\underline{239_{10}}}$$