

Conversion B_{16} Review

Reg $B_{16} \rightarrow B_{10}$

$$\begin{array}{r} 256 \quad 16 \quad 1 \\ 2F1_{16} \quad 2 \times 256 = 512 \\ 15 \times 16 = 240 \\ 1 \times 1 = 1 \\ \hline 753 \end{array}$$

Reg $B_{10} \rightarrow B_{16}$

$$\begin{array}{l} 491_{10} \quad 491 / 256 = 1R235 \quad 1 \\ 235 / 16 = 14R11 \quad (E) \\ 11 / 1 = 11 \quad (B) \end{array}$$

$$1EB_{16} = 491_{10} \checkmark$$

Alt $B_{16} \rightarrow B_{10}$

3A2

$$\begin{array}{r} 3 \\ \times 16 \\ \hline 48 \end{array} + A = 58$$

$$\frac{\times 16}{928} + 2 = \boxed{930_{10}} \checkmark$$

Alt $B_{10} \rightarrow B_{16}$

190₁₀

$$190 / 16 = 11R14 \quad (E)$$

$$11 / 1 = B$$

$$\boxed{BE_{16}} \checkmark$$

Conversion Review

Reg $B_2 \rightarrow B_{10}$ (multiply to...) (Regular weight)

$32 \ 16 \ 8 \ 4 \ 2 \ 1$
1011012

$$1 \times 32 = 32$$

$$1 \times 8 = 8$$

$$1 \times 4 = 4$$

$$1 \times 1 = 1$$

45

Reg $B_{10} \rightarrow B_2$ (divide away...) (Regular weight)

156₁₀

$$156/128 = 1R28$$

$$28/16 = 1R12$$

$$12/8 = 1R4$$

$$4/4 = 1R0$$

1001110
128 64 32 16 8 4 2 1

Alt $B_2 \rightarrow B_{10}$ (multiply to...) (Alternative Base)

1110110₂

$$\frac{1}{2} + 1 = 3$$

$$\frac{3}{2} + 1 = 7$$

$$\frac{7}{2} + 1 = 14$$

$$\frac{14}{2} + 1 = 29$$

$$\frac{29}{2} + 1 = 59$$

$$\frac{59}{2} + 0 = 118$$

Alt $B_{10} \rightarrow B_2$ (divide away...) (Alternative Base)

108₁₀

$$108/2 = 54R0$$

$$54/2 = 27R0$$

$$27/2 = 13R1$$

$$13/2 = 6R1$$

$$6/2 = 3R0$$

$$3/2 = 1R1$$

$$1/2 = 0R1$$

1101100₂