

8/31/20 17A Conversion table

1) 127_{10}

Base 16:

$$\begin{array}{r} 7 \\ 16 \overline{) 127} \\ \underline{-112} \\ 15 \end{array}$$

$$15_{10} = F$$

$$7 \times 16^1 + F \times 16^0 = \boxed{7F_{16}}$$

$$\begin{array}{r} 16 \\ \times 7 \\ \hline 112 \end{array}$$

Base 2: $7F_{16}$

$$\begin{array}{r} 7 \\ 0111 \end{array} \quad \begin{array}{r} F \\ 1111 \end{array}$$

$$\boxed{01111111_2}$$

Base 8: 1111111_2

$$\begin{array}{r} 001 \\ 1 \end{array} \quad \begin{array}{r} 111 \\ 7 \end{array} \quad \begin{array}{r} 111 \\ 7 \end{array}_2$$

$$\boxed{177_8}$$

2) Base 8: 10101_2

$$\begin{array}{r} 010 \\ 2 \end{array} \quad \begin{array}{r} 101 \\ 5 \end{array}$$

$$\boxed{25_8}$$

Base 16: 10101_2

$$\begin{array}{r} 0001 \\ 1 \end{array} \quad \begin{array}{r} 0101 \\ 5 \end{array}$$

$$\boxed{15_{16}}$$

Base 10:

$$\begin{array}{r} 1 \\ 10 \overline{) 15} \\ \underline{-10} \\ 5 \end{array}$$

$$1 \times 16^1 + 5 \times 16^0 = 16 + 5 = \boxed{21_{10}}$$

3) Base 2: 71_8

$$\begin{array}{r} 7_8 \\ 0111 \end{array} \quad \begin{array}{r} 1_8 \\ 0001 \end{array}$$

$$\boxed{111001_2}$$

Base 16: 111001_2

$$\begin{array}{r} 0011 \\ 3 \end{array} \quad \begin{array}{r} 1001 \\ 9 \end{array}$$

$$\boxed{39_{16}}$$

Base 10:

$$\begin{array}{r} 3 \\ 10 \overline{) 39} \\ \underline{-30} \\ 9 \end{array}$$

$$3 \times 16^1 + 9 \times 16^0 = 48 + 9 = 57_{10}$$

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4) Base 2: AB_{16}

A B
1010 1011

10101011_2

Base 8: 10101011_2

010 101 011
2 5 3

253_8

Base 10:

1	0	1	0	1	0	1	1							
1×2^7	0×2^6	1×2^5	0×2^4	1×2^3	0×2^2	1×2^1	1×2^0							
128	+	0	+	32	+	0	+	8	+	0	+	2	+	1

160 + 11

171_{10}