

# Conversions

1) 51.1875, 3.19921875, 0.2 : Convert to Binary, Octal, hex

2/51

2/25 1

2/12 1

2/6 0

2/3 0

2/1 1

10 1

$$\begin{array}{r} 1875_{10} \times 16 = 3_{16} \\ \underline{1600} \phantom{0000} \\ 275 \phantom{0000} \\ \underline{256} \phantom{0000} \\ 19 \phantom{0000} \\ \underline{16} \phantom{0000} \\ 3 \phantom{0000} \\ \underline{3} \phantom{0000} \\ 0 \phantom{0000} \end{array}$$

$$.0011_2$$

$$33_{10} \rightarrow 33.3_{16}$$

$$00110011.0011_2 \rightarrow 110011.0011 \times 2^0$$

$$0110011.1100 \rightarrow 11111110$$

$$33.300000_{16}$$

$$0 = 00000000$$

$$1's \text{ comp } \approx 11111111$$

$$2's \text{ comp } \approx 11111111$$

3.19921875

2/3

2/1 1

10 1

$$0011_2$$

$$\rightarrow$$

$$3_{16}$$

$$\rightarrow$$

$$3.33_{16}$$

$$.19921875 \times 16 \rightarrow 3$$

$$.19921875 \times 8 \rightarrow 1$$

$$.1875 \times 16 = 3$$

$$.599375 \times 8 \rightarrow 4$$

$$\rightarrow .33_{16}$$

$$.795 \times 8 \rightarrow 6$$

$$\rightarrow .146_8 \rightarrow 3.146_8$$

$$0011.00110011_2$$

$$0.2_{10} \rightarrow .2 \times 16 = 3$$

$$.2 \times 16 = 3$$

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$$.2 \times 16 = 3$$

$$.2 \times 16 = 3$$

$\rangle : 333 \dots 2$

Use

$$S_N = \frac{1}{1-r}$$

$$LD = \frac{3}{16} + \frac{3}{16^2} \left( \frac{1}{1 - (\frac{3}{16})} \right)$$

$$= \frac{3}{16} + \frac{3}{16} \left( \frac{16}{13} \right) = .41$$

$$\therefore 0.2_{10} \rightarrow .34_{16}$$

$$.2 \times 8 = 1$$

$$.2 \times 8 = 4$$

$$.8 \times 8 = 6$$

$$.4 \times 8 = 3$$

$$.2 \times 8 = 1$$

$.1463_8$

4

6

3