

→ Decimal to binary  
→ binary to octal

→ Decimal to binary

→ (17.3750)

→ (10001.011)<sub>2</sub>

Conversion (fraction)

2	17	
2	8	1
2	4	0
2	2	0
2	1	0
2	0	1

→ .3750

0.3750 × 2 = 0.7500 → 0  
0.7500 × 2 = 1.5000 → 1  
0.5000 × 2 = 1.0000 → 1

top to bottom

Binary to decimal

$\begin{matrix} 2^{-1} & 2^{-2} & 2^{-3} \\ 2 & 2 & 2 \\ (0.11) \end{matrix}$

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

0.25 + 0.125  
0.375

(10001.011)<sub>2</sub> =

$\begin{matrix} 2^4 & 2^3 & 2^2 & 2^1 & 2^0 \\ 1 & 0 & 0 & 0 & 1 \end{matrix}$

16 + 1 + 17

17.375 Ans

Decimal to octal (fraction)

(175.27)<sub>10</sub> =

(257.2121)<sub>8</sub>

2

8 | 175

1 . 97

—

$$\begin{array}{r} 2 \\ 16 = \\ \hline 56 \\ \hline 276 \\ \hline 216 \end{array}$$

$$\begin{array}{r|l} 8 & 175 \\ \hline 8 & 21 \rightarrow 7 \\ \hline 8 & 2 \rightarrow 5 \\ \hline & 0 \rightarrow 2 \end{array}$$

• 27

$$\begin{array}{l} \cdot 27 \times 8 \Rightarrow 2.16 \rightarrow 2 \\ \cdot 16 \times 8 \Rightarrow 1.28 \rightarrow 1 \\ \cdot 28 \times 8 \Rightarrow 2.24 \rightarrow 2 \\ \cdot 24 \times 8 \Rightarrow 1.92 \rightarrow 1 \\ 0.92 \times 8 \Rightarrow \end{array}$$

Oct to binary (fraction)

$$\begin{array}{c} \begin{array}{cc} \xleftarrow{L} & \xrightarrow{R} \end{array} \\ (11.32)_{16} \leftrightarrow (1001.0111)_2 \\ \downarrow \quad \searrow \\ 001 \ 001 \quad 011 \ 100 \end{array}$$