

# Lab 3 Conversion - NASA Format

1)  $18.125_{10} \rightarrow 12.2_{16} \rightarrow 00010010.0010_2$

$$\begin{array}{r} 1 \\ 16 \overline{) 18} \\ \underline{-16} \\ 2 \end{array}$$

$$16 \times .125 = 2.0$$

$$= 0.10010001 \times 2^5$$

$$00000101$$

$$\Rightarrow 11111010$$

## HEX NASA Format

0.100	1000	1000	0000	0000	0000	1111	1010
4	8	8	0	0	0	F	A

2)  $0.03_{10} \rightarrow 0.07AE4_{16} \rightarrow 0.0000011101011100100_2$

$$\begin{array}{r} 16 \\ \times .03 \\ \hline 0.48 \end{array}$$

$$\begin{array}{r} 16 \\ \times .48 \\ \hline 7.68 \end{array}$$

$$\begin{array}{r} 16 \\ \times .88 \\ \hline 10.88 \end{array}$$

Repeating

$$= 0.111010111001 \times 2^{-5}$$

$$\begin{array}{r} 16 \\ \times .88 \\ \hline 14.08 \end{array}$$

$$\begin{array}{r} 16 \\ \times .08 \\ \hline 1.28 \end{array}$$

$$\begin{array}{r} 16 \\ \times .28 \\ \hline 4.48 \end{array}$$

$$00000101$$

$$11111010$$

$$+1$$

$$\begin{array}{r} 16 \\ \times .48 \\ \hline 7.68 \end{array}$$

$$11111011$$

## Hex NASA Format

0.111	1010	1110	0101	1110	1011	1111	1011
7	A	E	5	E	B	F	B