Cody England

Lab Conversions Base 2, 8, 10, 16

$.123_{10} = 1 \cdot 10^{-1} + 2 \cdot 10^{-2} + 3 \cdot 10^{-3}$

1)

$0,25_{10} = 2 \cdot 10^{-1} + 5 \cdot 10^{-2}$

$\rightarrow Base_{16}$ $0.25_{10} \cdot 16 = \boxed{4.0_{16}}$

$\rightarrow Base_2$ $\boxed{0,0100\ 0000_2}$

$\boxed{0,2\ 0\ 0_8}$

2) $0,25_8 = \frac{2}{8} + \frac{5}{64} = \boxed{\frac{21}{64}_{10}}$

$\rightarrow Base_2$ $\boxed{0.010101_2}$ (0 . 2 5)

$\rightarrow Base_{16}$ $\boxed{0.54_{16}}$

$\frac{5}{16} + \frac{4}{256} = \frac{84}{256} = \frac{21}{64}$

3) $0.25_{16} \rightarrow Base_{10}$

$= \frac{2}{16} + \frac{5}{256} = \boxed{\frac{37}{256}_{10}}$

$\rightarrow Base_2$

$\boxed{0.00100101_2}$ (0 . 2 5)

$\rightarrow Base_8$ $\boxed{0.1128}$ $= \frac{1}{8} + \frac{1}{64} + \frac{2}{512} = \frac{74}{512} = \frac{37}{256}_{10}$

4) $0.1101_2 \rightarrow Base_{10} = \frac{1}{2} + \frac{1}{4} + \frac{1}{16} = \boxed{\frac{13}{16}_{10}}$

$\rightarrow Base_8$ 0.1101

$\boxed{0.64_8}$ $= \frac{6}{8} + \frac{4}{64} = \frac{52}{64} = \frac{13}{16}_{10}$

$\rightarrow Base_{16}$ 0.1101

$\boxed{0.D_{16}}$ $= \frac{13}{16}_{10}$