Lab 2 Conversions

1) 0.25_{10} to base 2, 8, 16

Base 2 = 0.01
Base 8 = 0.2
Base 16 = 0.4

$0.25 \times 16 = 4 \rightarrow 0.4_{16}$
$= 4 \times 16^{-1}$
$= 0.25_{10}$

$0.25 \times 8 = 2 \rightarrow 0.2_8$
$= 2 \times 8^{-1}$
$= 0.25_{10}$

2) 0.25_8 to base 2, 10, 16

Base 2 = 0.010101
Base 16 = 0.54
Base 10 = 0.328125

0.25
$= 2 \times 8^{-1} + 5 \times 8^{-2}$
$0.25 + 0.078125$
$= 0.328125$

3) 0.25_{16} to base 2, 8, 10

Base 2 = 0.00100101
Base 8 = 0.112
Base 10 = 0.14453125

0.112_8
$= 1 \times 8^{-1} + 1 \times 8^{-2} + 2 \times 8^{-3}$
$= 0.125 + 0.015625 + 0.00390625$
$= 0.14453125$

4) 0.1101_2 to Base 8, 10, 16

Base 8 = 0.64
Base 16 = 0.D
Base 10 = 0.8125

$0.D_{16}$
$= 13 \times 16^{-1}$
$= 0.8125$