Sonya Smalley

	Base 10	Base 2	Base 8	Base 16
1)	0.25	0.01	0.2	0.4
2)	0.328125	0.010101	0.25	0.54
3)	0.14453125	0.00100111	0.116	0.25
4)	0.8125	0.1101	0.64_8	0.D

1) $0.25_{10} \times 16 = 4.0 \therefore 0.25_{10} = 0.4_{16} = 0.\overline{0100}_2 = 0.2_8$

2) $0.25_8 = 0.010\ 101_2 = 0.\overline{0101}\ \overline{0100}_2 = 0.54_{16}$
$0.54_{16} = 5 \times 16^{-1} + 4 \times 16^{-2} = 5/16 + 4/16^2 = (5/16)(16/16) + 4/256$
$= 80/256 + 4/256 = 84/256 = 21/64 = 0.328125_{10}$

3) $0.25_{16} = 2 \times 16^{-1} + 5 \times 16^{-2} = 2/16 + 5/16^2 = (2/16)(16/16) + 5/256$
$= 32/256 + 5/256 = 37/256 = 0.14453125_{10}$
$0.25_{16} = 0.\overline{0010}\ \overline{0111}_2 = 0.001\ 001\ 110_2 = 0.116_8$

4) $0.1101_2 = 1 \times 2^{-1} + 1 \times 2^{-2} + 0 \times 2^{-3} + 1 \times 2^{-4} = 1/2 + 1/2^2 + 1/2^4$
$= (1/2)(8/8) + (1/2)(4/4) + 1/16 = 8/16 + 4/16 + 1/16 = 13/16_{10} = 0.8125_{10}$
$0.1101_2 = 0.D_{16}$
$0.1101_2 = 0.110\ 100_2 = 0.64_8$