1.
$$375.54_{8} = 3 \times 64 + 7 \times 8 + 5 + 5/8 + 4/64$$

$$= 253.6875_{10}$$

$$3 \mid \underline{253} \qquad 0.69$$

$$3 \mid \underline{84} \qquad \text{r1} \qquad \underline{3}$$

$$3 \mid \underline{28} \qquad \text{r0} \qquad (2).07$$

$$3 \mid \underline{9} \qquad \text{r1} \qquad \underline{3}$$

$$3 \mid \underline{1} \qquad \text{r0} \qquad 3$$

$$0 \qquad \text{r1} \qquad (0).63$$

$$3 \quad \underline{1} \qquad 0 \qquad \underline{1}$$

$$3 \quad \underline{1} \qquad 0 \qquad \underline{1}$$

 $\therefore 375.54_8 = 100101.2001_3$

2.

	6311			6311
0	0000		0	0000
1	0001		1	0010
2	0011		2	0011
3	0100		3	0100
4	0101		4	0110
5	0111	or	5	0111
6	1000		6	1000
7	1001		7	1010
8	1011		8	1011
9	1100		9	1100

9253 = 1100 0011 0111 0100

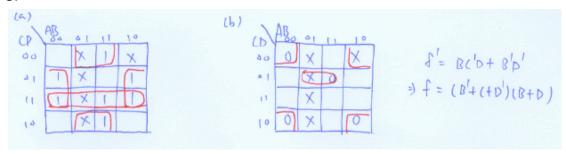
3.
$$G = [(AB)'(B+C)]'C = (AB+B'C')C = ABC$$

4.
$$A'C'D' + ABD' + A'CD + B'D$$

$$= D' (A'C' + AB) + D (A'C + B')$$

$$= D' [(A' + B) (A + C')] + D [(B' + A') (B' + C)]$$
 {Using $XY + X'Z = (X' + Y) (X + Z)$ twice inside the brackets}
$$= [D + (A' + B) (A + C')] [D' + (B' + A') (B' + C)]$$
 {Using $XY + X'Z = (X' + Y) (X + Z)$ with $X = D$ }
$$= (D + A' + B) (D + A + C') (D' + B' + A') (D' + B' + C)$$
 {Using the Distributive Law}

5.



6.

