

$$A'BC + ABC = BC(A + A') = BC$$

$$AB'C + ABC = AC(B + B') = AC$$

$$ABC' + ABC = AB(C + C') = AB$$

$$\underline{\underline{0 = BC + AC + AB}}$$

Q1 ENCODER

I_3	I_2	I_1	I_0	O_1	O_0
0	0	0	1	0	0
0	0	1	0	0	1
0	1	0	0	1	0
1	0	0	0	1	1

$$O_1 = I_3' I_2 I_1' I_0' + I_3 I_2' I_1' I_0'$$

$$O_1 = I_1' I_0' (I_3' I_2 + I_3 I_2')$$

$$O_0 = I_3' I_2' I_1 I_0' + I_3 I_2' I_1' I_0'$$

$$O_0 = I_0' I_2' (I_1 I_3' + I_1' I_3)$$