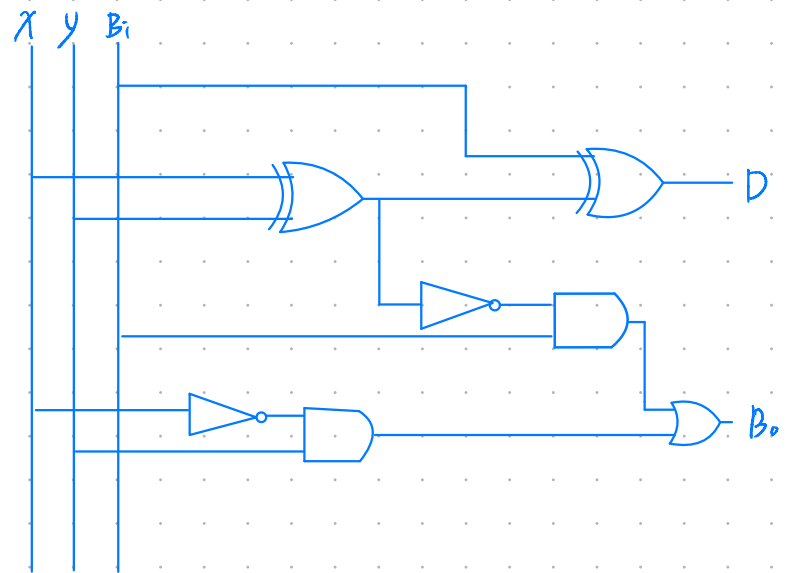


Subtractor

E94106151 游宗謀

Inputs			Outputs	
x	y	B_i	D	B_o
0	0	0	0	0
0	0	1	1	1
0	1	0	1	1
1	0	0	1	0
1	1	0	0	0
1	0	1	0	0
0	1	1	0	1
1	1	1	1	1



$$\begin{aligned}
 D &= x'y'c_i + x'yc_i' + xy'c_i' + xyc_i \\
 &= (x'y' + xy)c_i + (x'y + xy')c_i' \\
 &= (x \oplus y)'c_i + (x \oplus y)c_i' \\
 &= (x \oplus y) \oplus c_i
 \end{aligned}$$

$$\begin{aligned}
 B_o &= x'y'c_i + x'yc_i' + x'yc_i + xyc_i \\
 &= (x'y' + x'y + xy)c_i + x'yc_i' \\
 &= (x \oplus y)'c_i + x'y(c_i + c_i') \\
 &= (x \oplus y)'c_i + x'y
 \end{aligned}$$