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Present state	Next state		Output	
	x=0	x=1	x=0	x=1
a	f	b	0	0
b	d	c	0	0
c	f	e	0	0
d	g	a	1	0
e	d	c	0	0
f	f	b	1	1
g	g	h	0	1
h	g	a	1	0

Present states d and h, b and e are equal.

Present state	Next state		Output	
	x=0	x=1	x=0	x=1
a	f	b	0	0
b	d	c	0	0
c	f	b	0	0
d	g	a	1	0
f	f	b	1	1
g	g	d	0	1

Present states a and c are equal

Present	Next State		Output	
State	x=0	x=1	x=0	x=1
a	f	b	0	0
b	d	a	0	0
d	g	a	1	0
f	f	b	1	1
g	g	d	0	1

converting to binary equivalents:

Present	Next State		Output	
State	x=0	x=1	x=0	x=1
000 (a)	011	001	0	0
001 (b)	010	000	0	0
010 (d)	100	000	1	0
011 (f)	011	001	1	1
100 (g)	100	010	0	1

states can be expressed with 3 variables.

A	B	C	x	Q_A	Q_B	Q_C	J_A	J_B	J_C	K_A	K_B	K_C	Y
0	0	0	0	0	0	1	0	1	1	X	X	X	0
0	0	0	1	0	0	1	0	0	1	X	X	X	0
0	0	1	0	0	1	0	0	1	X	X	X	1	0
0	0	1	1	0	0	0	0	0	X	X	X	1	0
0	1	0	0	1	0	0	1	X	0	X	1	X	1
0	1	0	1	0	0	0	0	X	0	X	1	X	0
0	1	1	0	0	1	1	0	X	X	X	0	0	1
0	1	1	1	0	0	1	0	X	X	X	1	0	1
1	0	0	0	1	0	0	X	0	0	0	X	X	0
1	0	0	1	0	1	0	X	1	0	1	X	X	1

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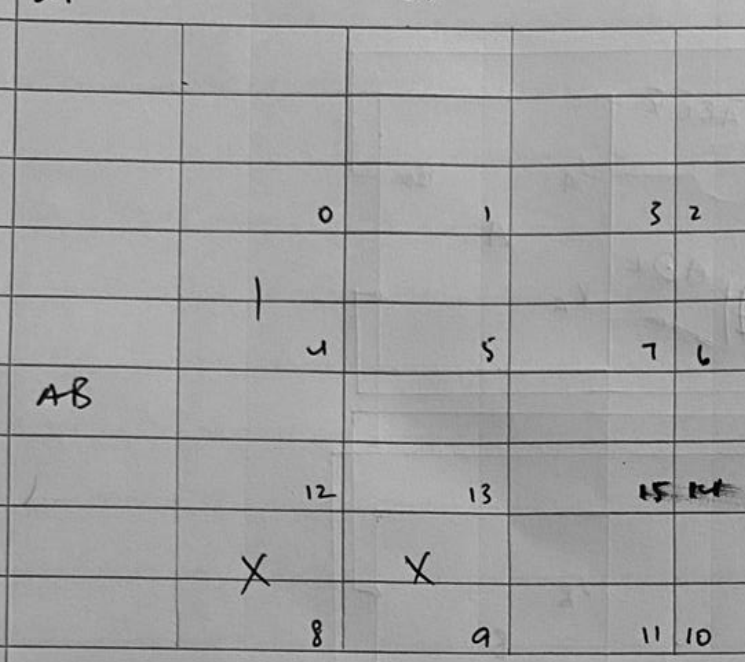


$J_A = \bar{A} B \bar{C} \bar{x}$

Similarly:

$J_B = \bar{A} \bar{x} + Ax$

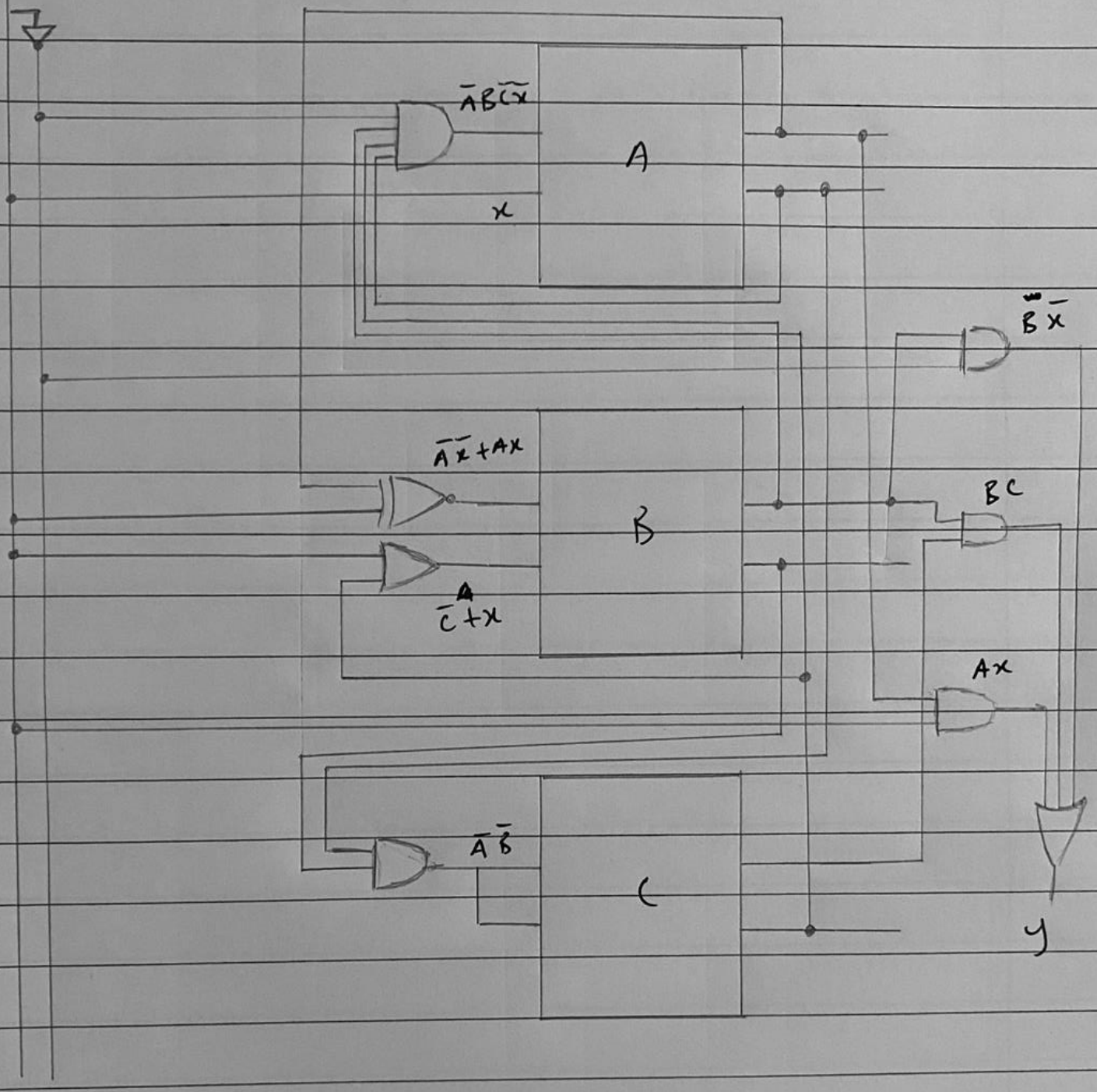
$J_C = \bar{A} \bar{B}$

$K_A = \bar{B}\bar{C} x$

$K_B = \bar{C} + x$

$K_C = \bar{A} \bar{B}$

$y = B\bar{x} + BC + Ax$


$\bar{A}B\bar{C}\bar{x}$
A
x
$\bar{B}\bar{x}$
$\bar{A}\bar{x}+Ax$
B
$\bar{C}+x$
BC
Ax
$\bar{A}\bar{B}$
C
y