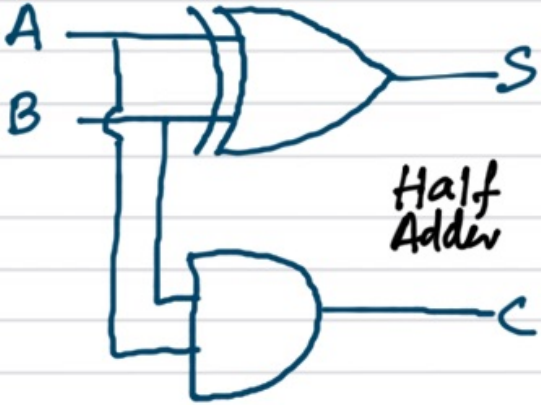
3.3.1

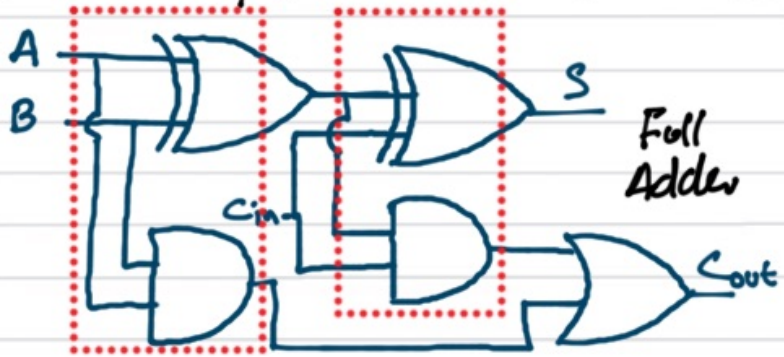
ADDERS

These circuits add bits and are found in ALU.
They take two/three inputs and produce two outputs.
Those which take two inputs are called "half adders"
and those which take three inputs are called "full adders".



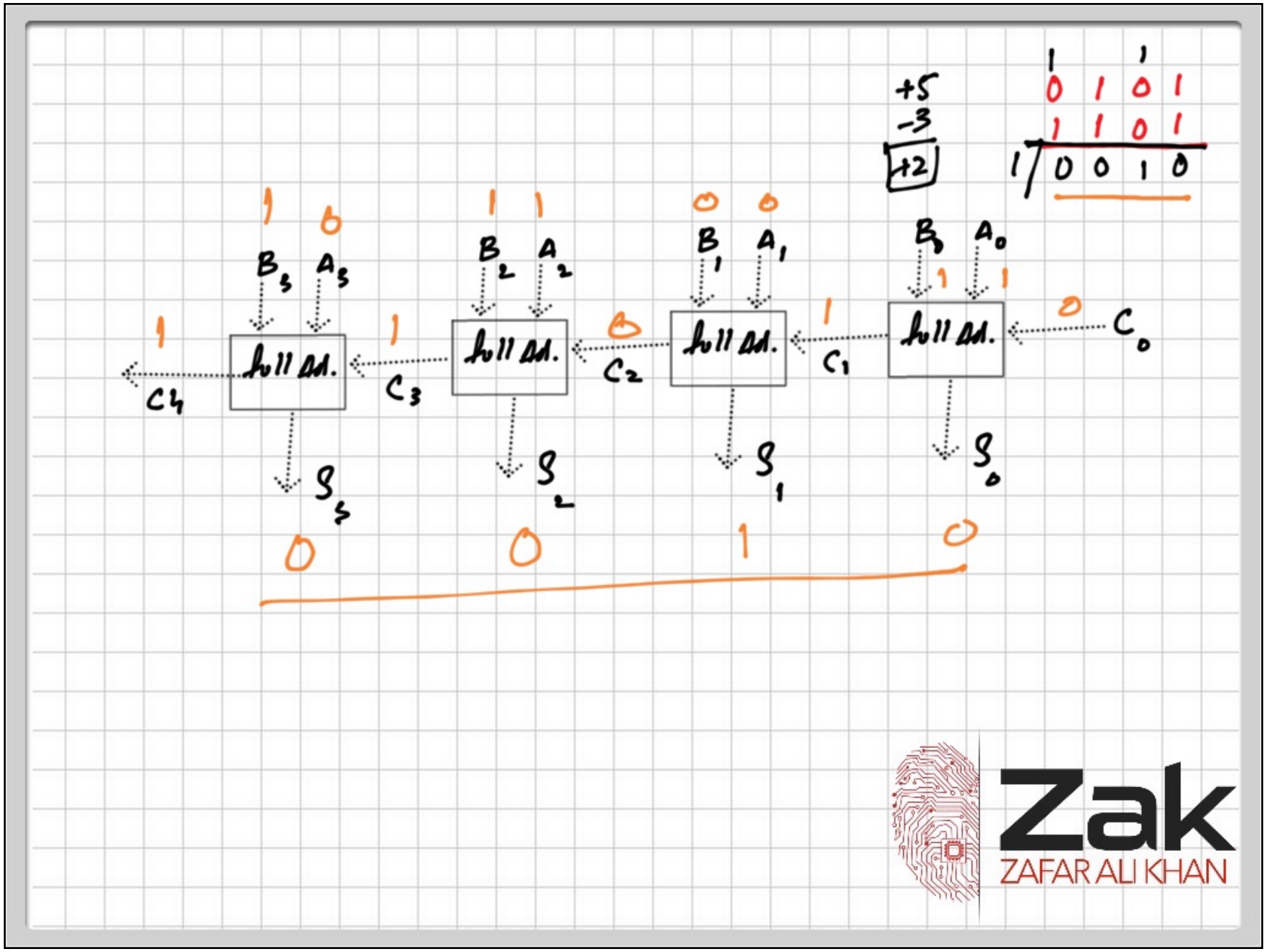
A	B	C	S
0	0	0	0
0	1	0	1
1	0	0	1
1	1	1	0

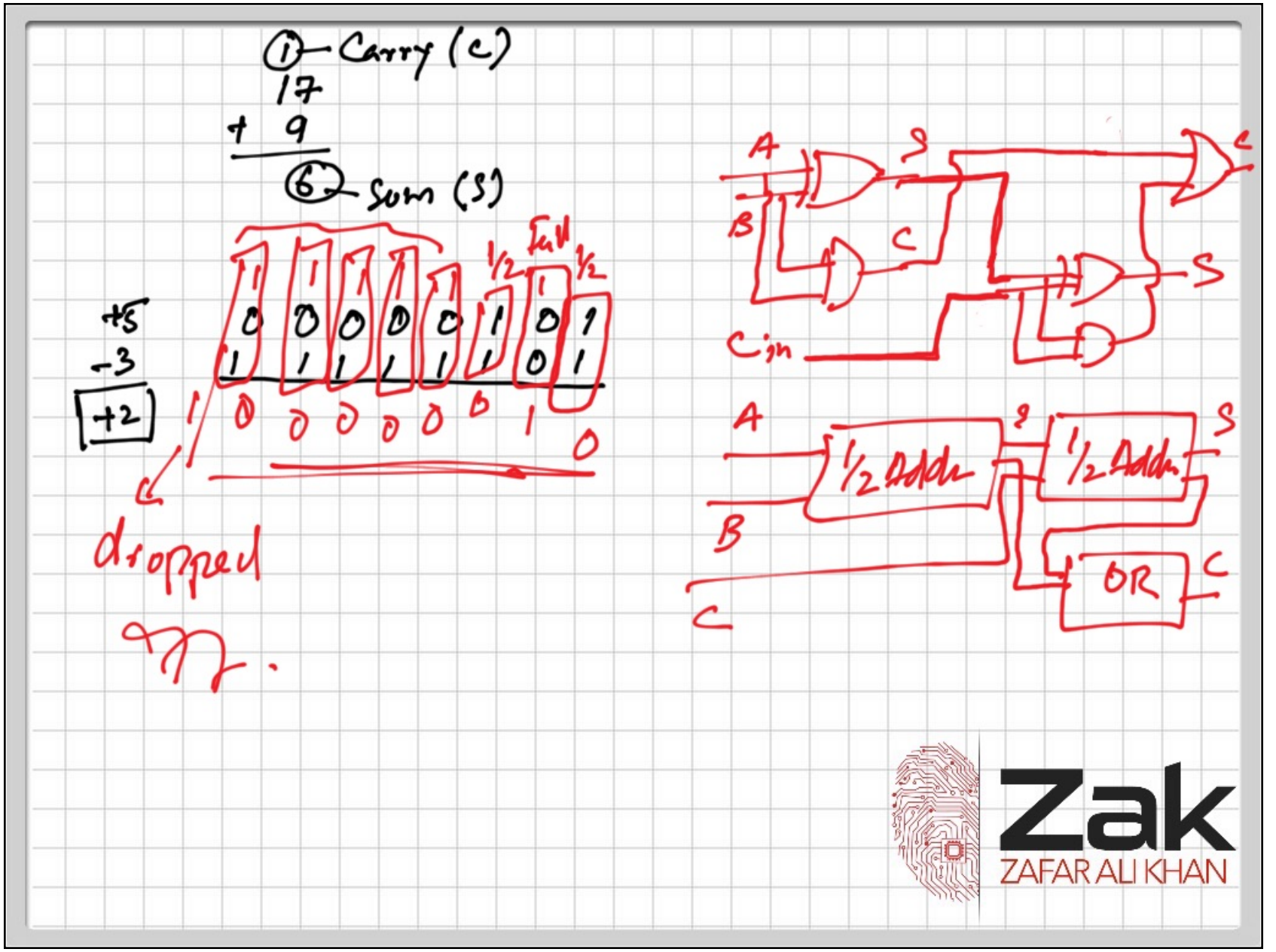
½ adder Truth Table.



A	B	C_{in}	C_{out}	S
0	0	0	0	0
0	0	1	0	1
0	1	0	0	1
0	1	1	1	0
1	0	0	0	1
1	0	1	1	0
1	1	0	1	0
1	1	1	1	1

Full Adder Truth Table.


+5
-3
+2
1 1
0 1 0 1
1 1 0 1
1 0 0 1 0
B3 A3
B2 A2
B1 A1
B0 A0
full Ad.
full Ad.
full Ad.
full Ad.
C4
C3
C2
C1
C0
S3
S2
S1
S0
Zak
ZAFAR ALI KHAN


1 Carry (C)
17
+ 9
6 Sum (S)
+5
-3
+2
1/2
Full
1/2
dropped
A
B
C
S
Cin
A
B
C
1/2 Adder
1/2 Adder
OR
S
C
Zak
ZAFAR ALI KHAN