CS223 Lab Assignment 1
Preliminary Work
Bilkent University
Spring 2021/2022
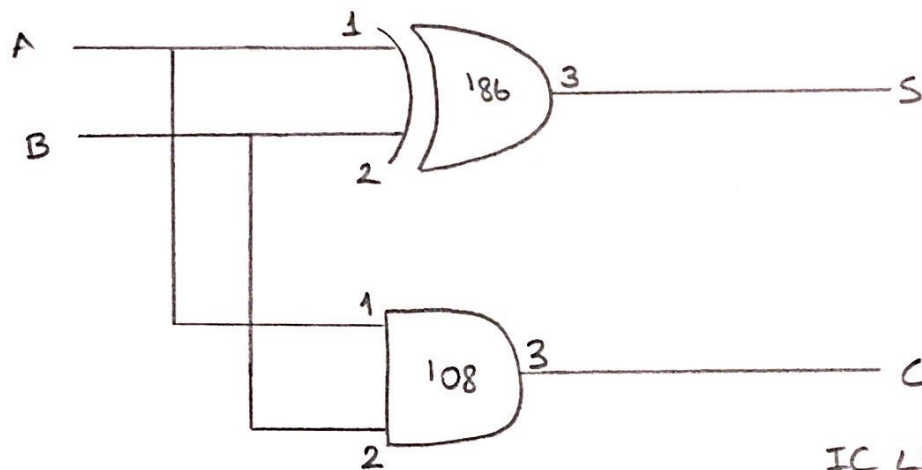
Deniz Tuna Onguner

22001788

Section 2

February 21, 2021

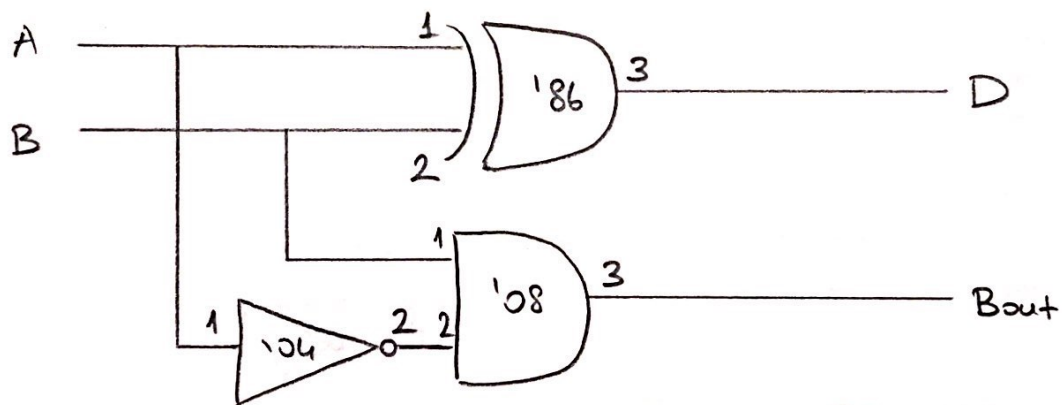# HALF ADDER

A —————— 1
B —————— 2 [XOR '86] 3 ———— S

1
2 [AND '08] 3 ———— C

7 - GND / 14 - VCC

IC List:
1 x 74LS86
1 x 74LS08

HALF SUBTRACTOR

A —————— 1
B —————— 2 [XOR '86] 3 ———— D

1
2 [AND '08] 3 ———— Bout

1 [NOT '04] 2

7 - GND / 14 - VCC

IC List:
1 x 74LS86
1 x 74LS08
1 x 74LS04

FULL ADDER

A

B

1
2
'86
3

4
5
'86
6

SUM

1
2
'08
3

4
5
'08
6

1
2
'32
3

Cout

Cin
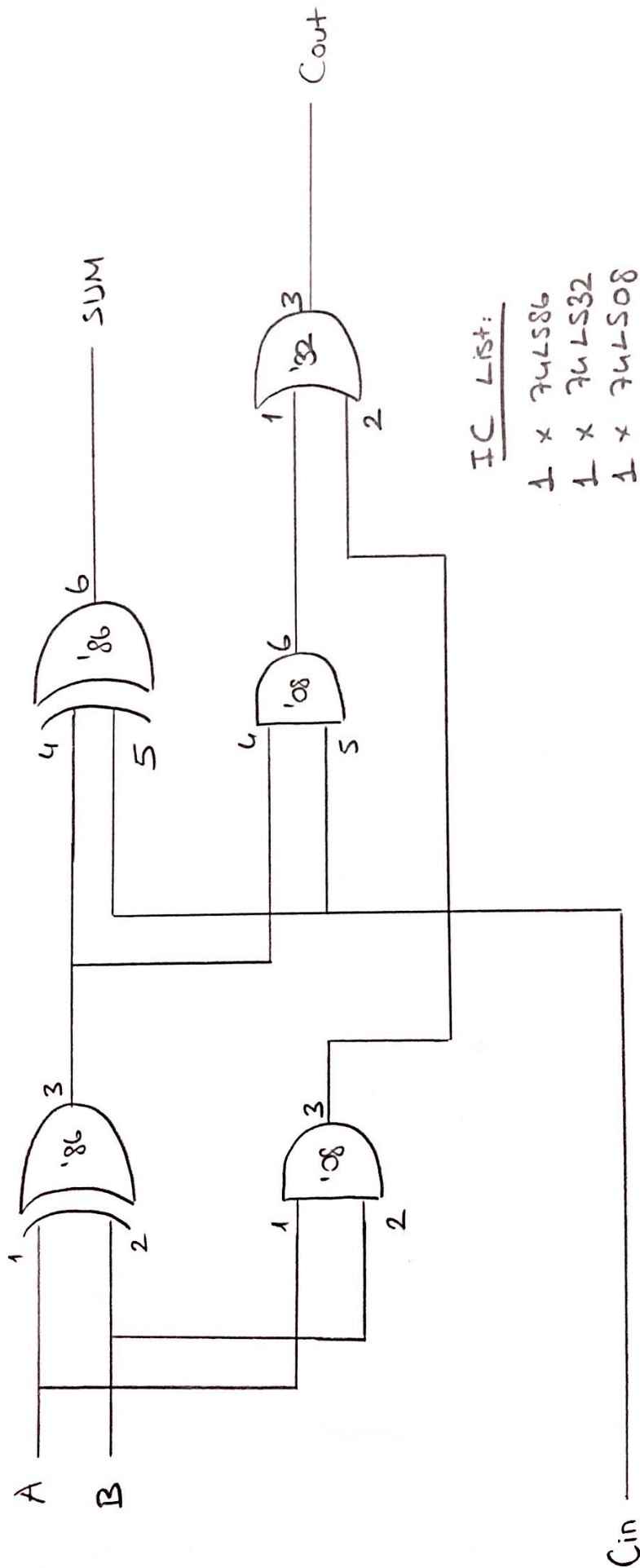
7 - GND / 14 - VCC

FULL SUBTRACTOR

A

B

Cin

D

Bout

'86

'86

'04

'08

'08

'04

'32
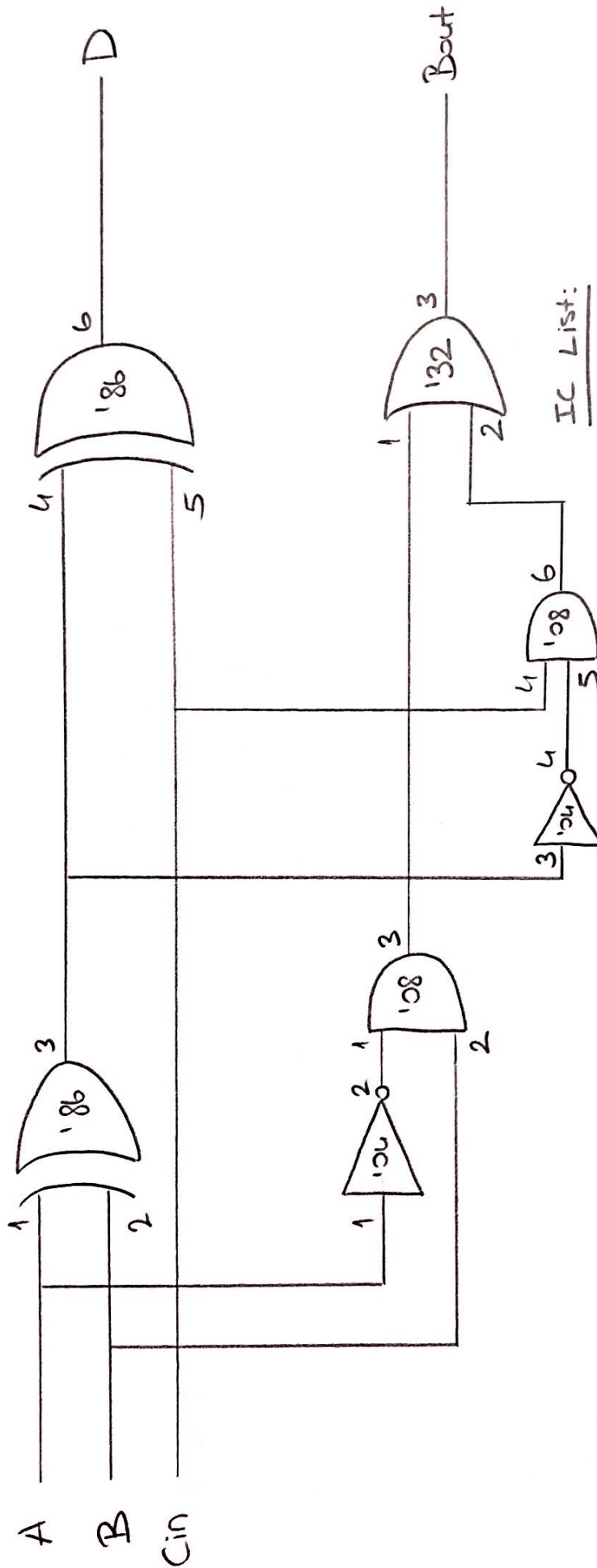
IC List:
1x 74 LS86
1x 74LS08
1x 74LS04
1x 74LS32

7 - GND / 14 - VCC

Scanned with CamScanner

THREE INPUT XOR GATE

IC List:
1x 74LS86
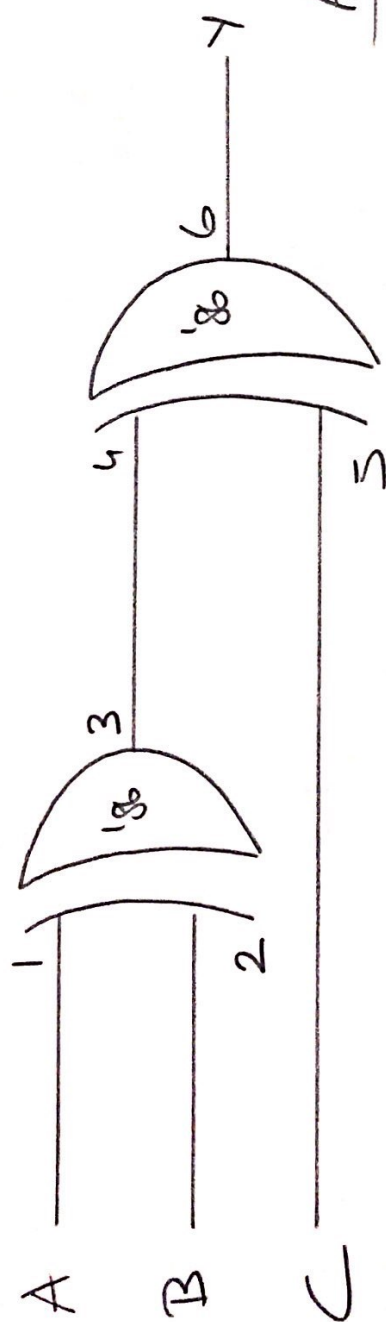
7 - GND / 14 - VCC

$$Y = (A \oplus B) \oplus C$$

A	B	C	Y
0	0	0	0
0	0	1	1
0	1	0	1
0	1	1	0
1	0	0	1
1	0	1	0
1	1	0	0
1	1	1	1