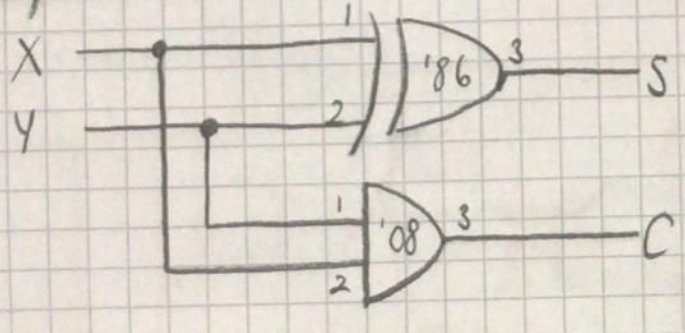
CS 223
Section No: 3
Spring 2020
Lab No 1
Selen Görgün / 21802674

Half Adder



$S = X \cdot \bar{Y} + \bar{X} \cdot Y$

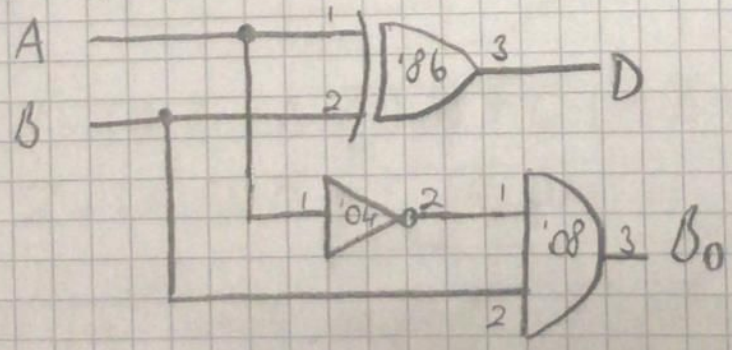
$C = X \cdot Y$

IC List
1) One 7486 Quad 2-Input XOR Gate
2) One 7408 Quad 2-Input AND Gate

7486
GND - 7
+5V - 14

7408
GND - 7
+5V - 14

Half Subtractor



$D = A \cdot \bar{B} + \bar{A} \cdot B$

$B_0 = \bar{A} \cdot B$

IC List
1) One 7486 Quad 2-Input XOR Gate
2) One 7404 HEX Inverting Gate
3) One 7408 Quad 2-Input AND Gate

7486
GND - 7
+5V - 14

7408
GND - 7
+5V - 14

7404
GND - 7
+5V - 14

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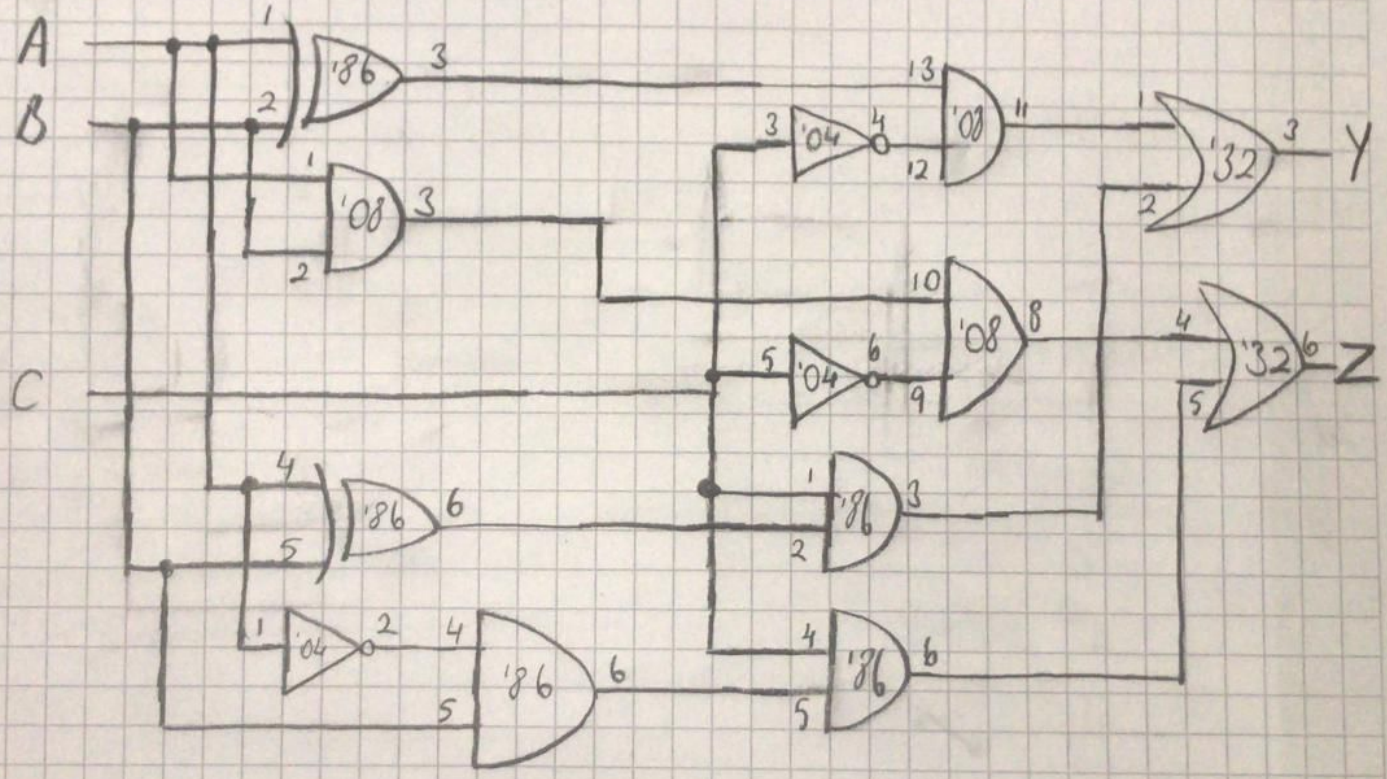
Selen Görgün / 28026 74
Lab Calculator



$Y = (A \cdot B + B \cdot \overline{A}) \cdot \overline{C} + C \cdot (A \cdot \overline{B} + \overline{A} \cdot B)$

$Z = (A \cdot B) \cdot \overline{C} + C \cdot (\overline{A} \cdot B)$

IC List

1) One 7486 Quad 2-Input XOR Gate
2) One 7432 Quad 2-Input OR Gate
3) Two 7408 Quad 2-Input AND Gate
4) One 7404 Hex Inverting Gate

7404
GND-7
+5V-14

7408
GND-7
+5V-14

7432
GND-7
+5V-14

7486
GND-7
+5V-14