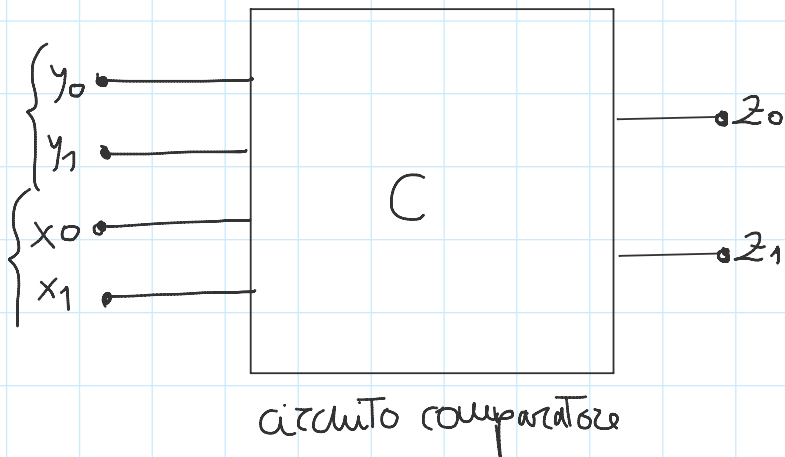


### 3. Esercizio 6 aprile

lunedì 6 aprile 2020 19:34



$$z_1 z_0 = \begin{bmatrix} y_1 y_0 \\ x_1 x_0 \end{bmatrix}$$

es.  $y_1 y_0 = 11 (3)$

$x_1 x_0 = 10 (2)$

$z_1 z_0 = \left\lfloor \frac{3}{2} \right\rfloor = [1, 5] = 2 \Rightarrow 10$  binario

es.  $x_1 x_0 = 00 \Rightarrow z_1 z_0 = XX$

IMPLICANTI

| $x_1 x_0 \backslash y_1 y_0$ | 00 | 01 | 11 | 10 |
|------------------------------|----|----|----|----|
| 00                           | X  | X  | X  | X  |
| 01                           |    |    | 1  | 1  |
| 11                           |    |    |    |    |
| 10                           |    |    | 1  |    |

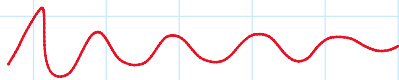
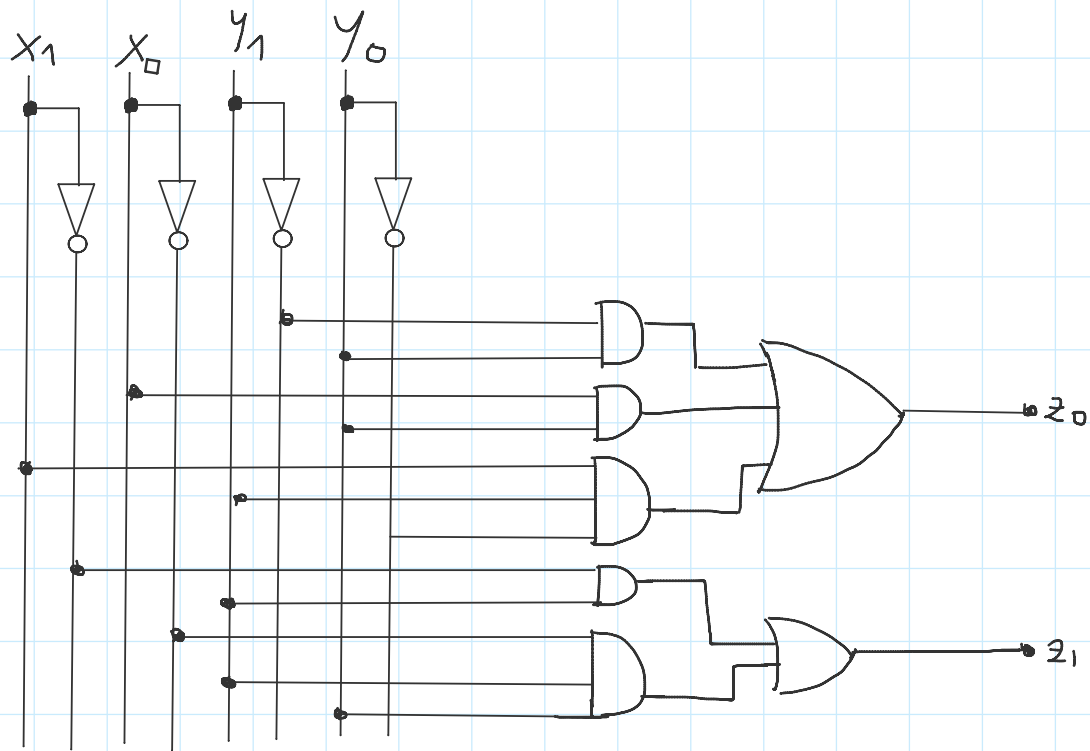
$z_1$  (pointing to the 11 column)  
 $p_5 = \overline{x_0} y_1 y_0$   
 $p_4 = \overline{x_1} y_1$

$z_1 = p_4 + p_5$

| $x_1 x_0 \backslash y_1 y_0$ | 00 | 01 | 11 | 10 |
|------------------------------|----|----|----|----|
| 00                           | X  | X  | X  | X  |
| 01                           |    | 1  | 1  |    |
| 11                           |    | 1  | 1  | 1  |
| 10                           |    | 1  |    | 1  |

$z_0$  (pointing to the 01 column)  
 $p_1 = \overline{y_0} y_1$   
 $p_2 = x_0 y_0$   
 $p_3 = x_1 y_1 \overline{y_0}$

$z_0 = p_1 + p_2 + p_3$



## IMPLICATI

| $x_1 x_0$ | $y_1 y_0$ | 00 | 01 | 11 | 10 |
|-----------|-----------|----|----|----|----|
| 00        | X         | X  | X  | X  | X  |
| 01        | 0         | 0  |    |    |    |
| 11        | 0         | 0  | 0  | 0  | 0  |
| 10        | 0         | 0  |    |    | 0  |

$s_3 = \bar{x}_1 + y_0$  (green arrow from 11 row, 00 column)  
 $s_1 = y_1$  (pink arrow from 00 row, 01 column)  
 $s_2 = \bar{x}_1 + \bar{x}_0$  (blue arrow from 11 row, 11 column)

$$z_1 = s_1 \cdot s_2 \cdot s_3 = y_1 (\bar{x}_1 + \bar{x}_0) (\bar{x}_1 + y_0)$$

| $x_1 x_0$ | $y_1 y_0$ | 00 | 01 | 11 | 10 |
|-----------|-----------|----|----|----|----|
| 00        | X         | X  | X  | X  | X  |
| 01        | 0         | 0  |    |    | 0  |
| 11        | 0         | 0  |    |    |    |
| 10        | 0         | 0  | 0  |    |    |

$s_6 = x_1 + y_0$  (pink arrow from 00 row, 11 column)  
 $s_5 = x_0 + \bar{y}_1 + \bar{y}_0$  (pink arrow from 10 row, 01 column)  
 $s_4 = y_1 + y_0$  (purple arrow from 00 row, 01 column)

$$z_0 = s_4 \cdot s_5 \cdot s_6 = (y_1 + y_0) (x_0 + \bar{y}_1 + \bar{y}_0) (x_1 + y_0)$$