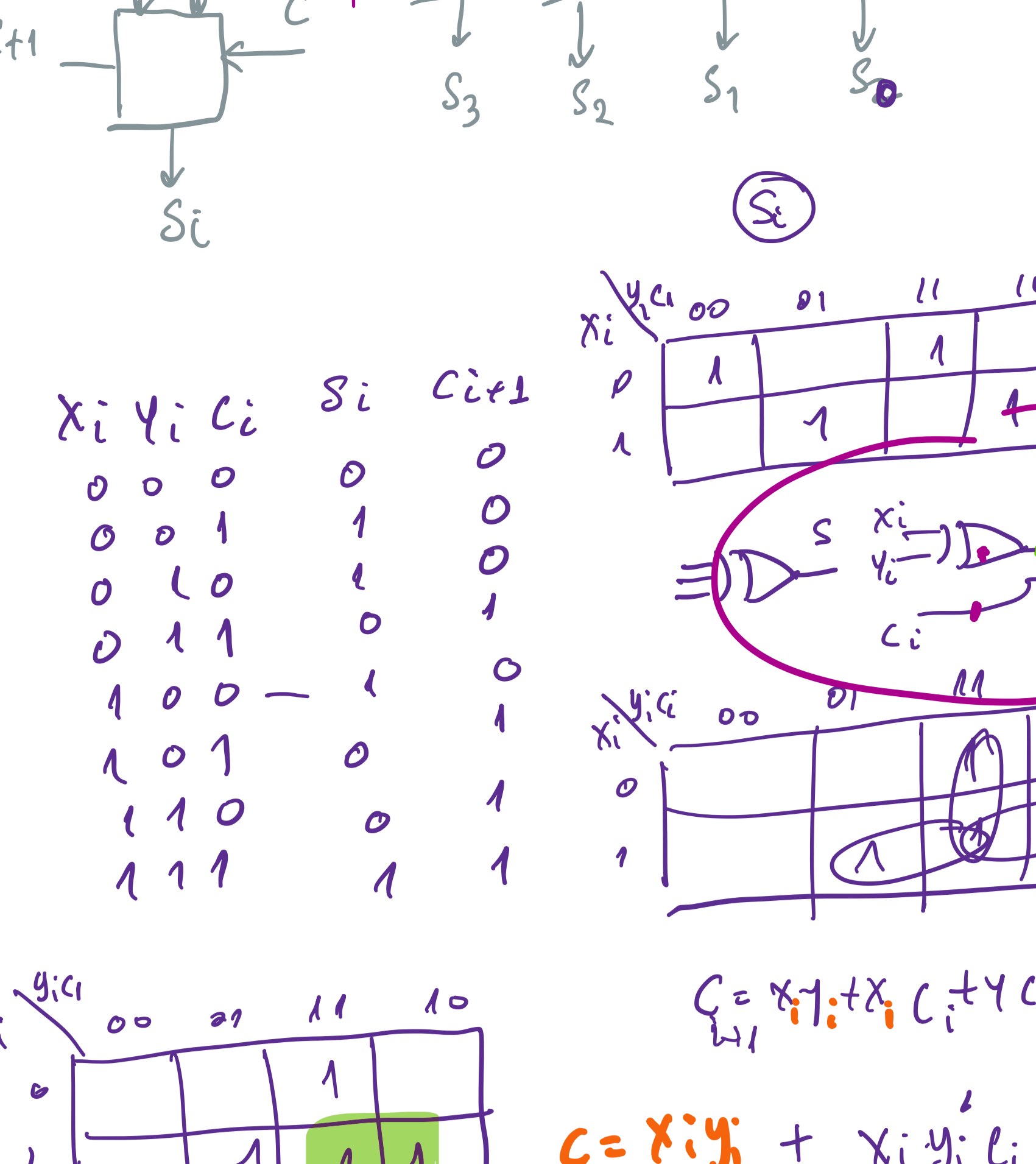
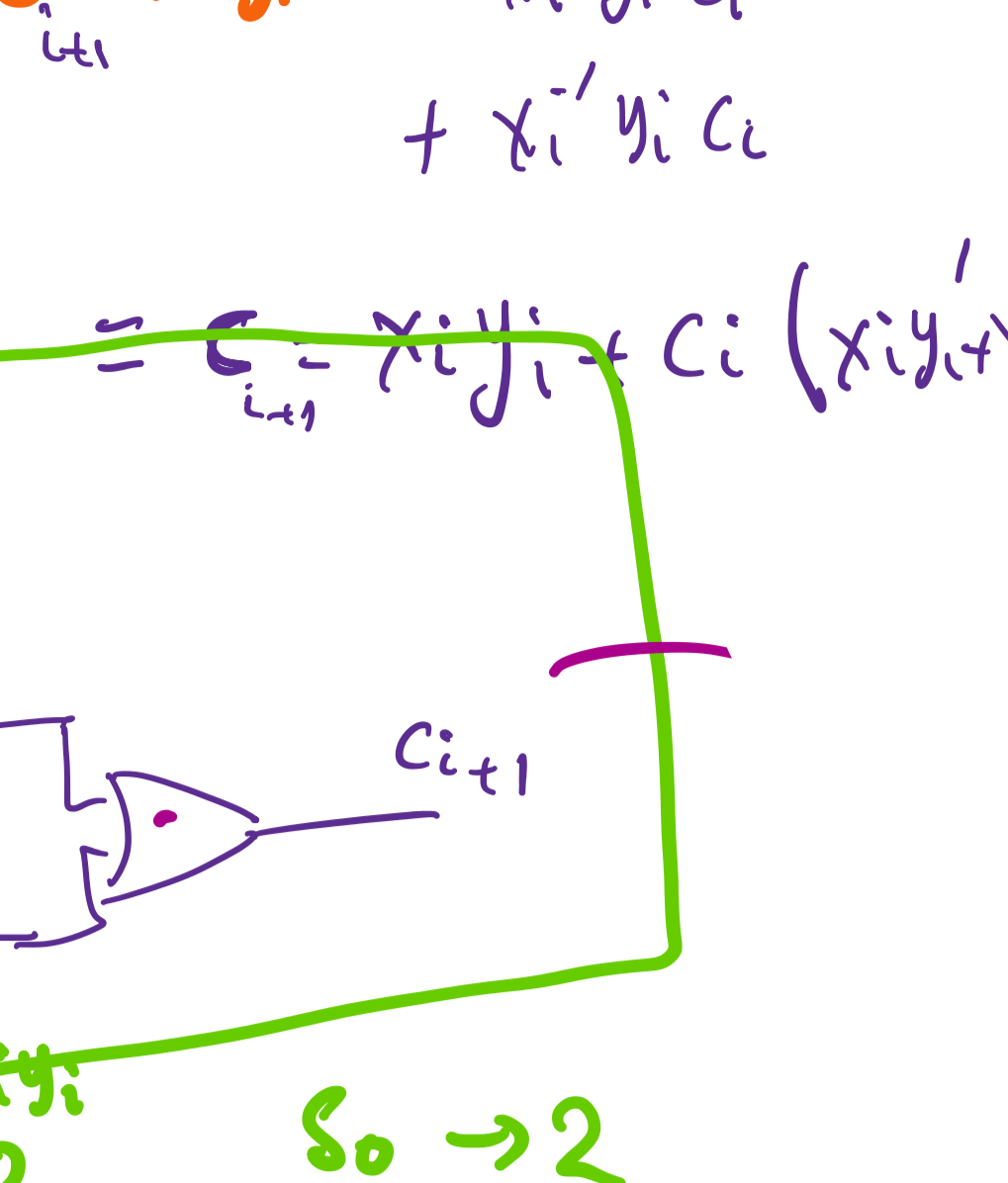


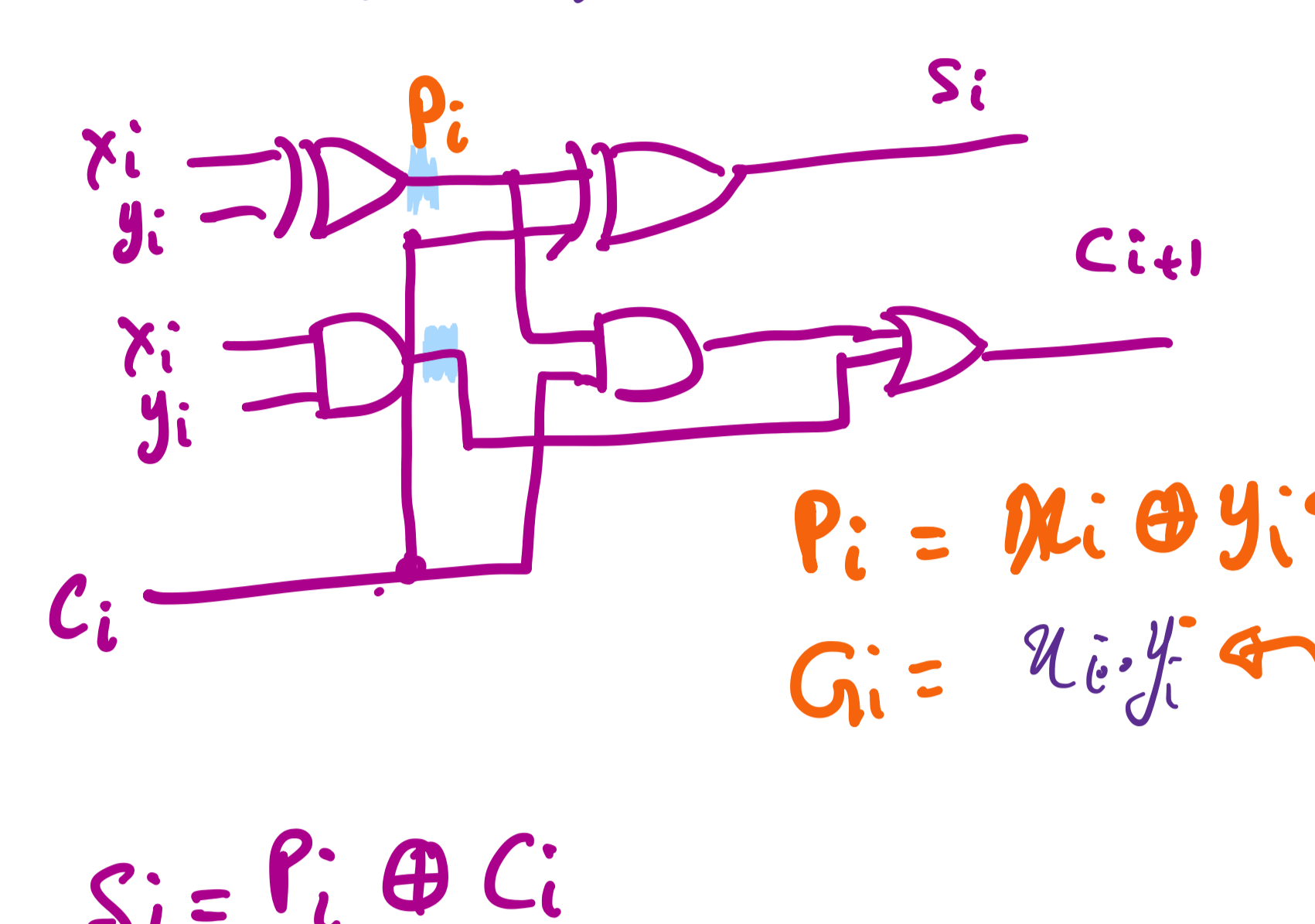
Καθυστέρηση:
Αδρονή



x_i	y_i	C_i	S_i	C_{i+1}
0	0	0	0	0
0	0	1	1	0
0	1	0	1	0
0	1	1	0	1
1	0	0	1	0
1	0	1	0	1
1	1	0	0	1
1	1	1	1	1



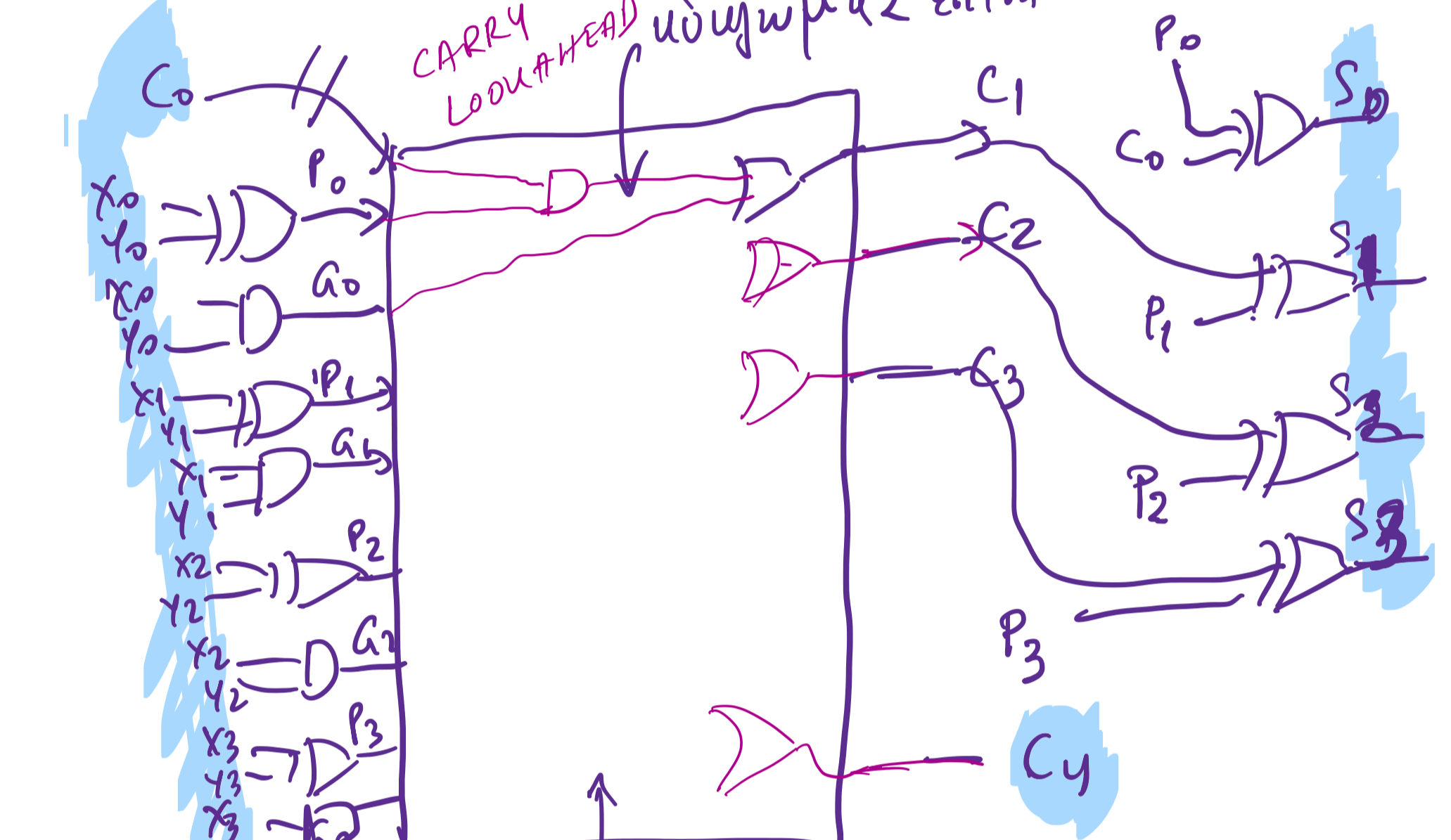
$C_i = x_i y_i + x_i y_i C_i + x_i' y_i C_i$
 $= C_{i-1} x_i y_i + C_i (x_i y_i + x_i' y_i)$



$P_i = x_i + y_i$
 $G_i = x_i y_i$
 $S_i = P_i \oplus C_i$
 $C_{i+1} = G_i + P_i C_i$ (2n+1) καθυστερήματα

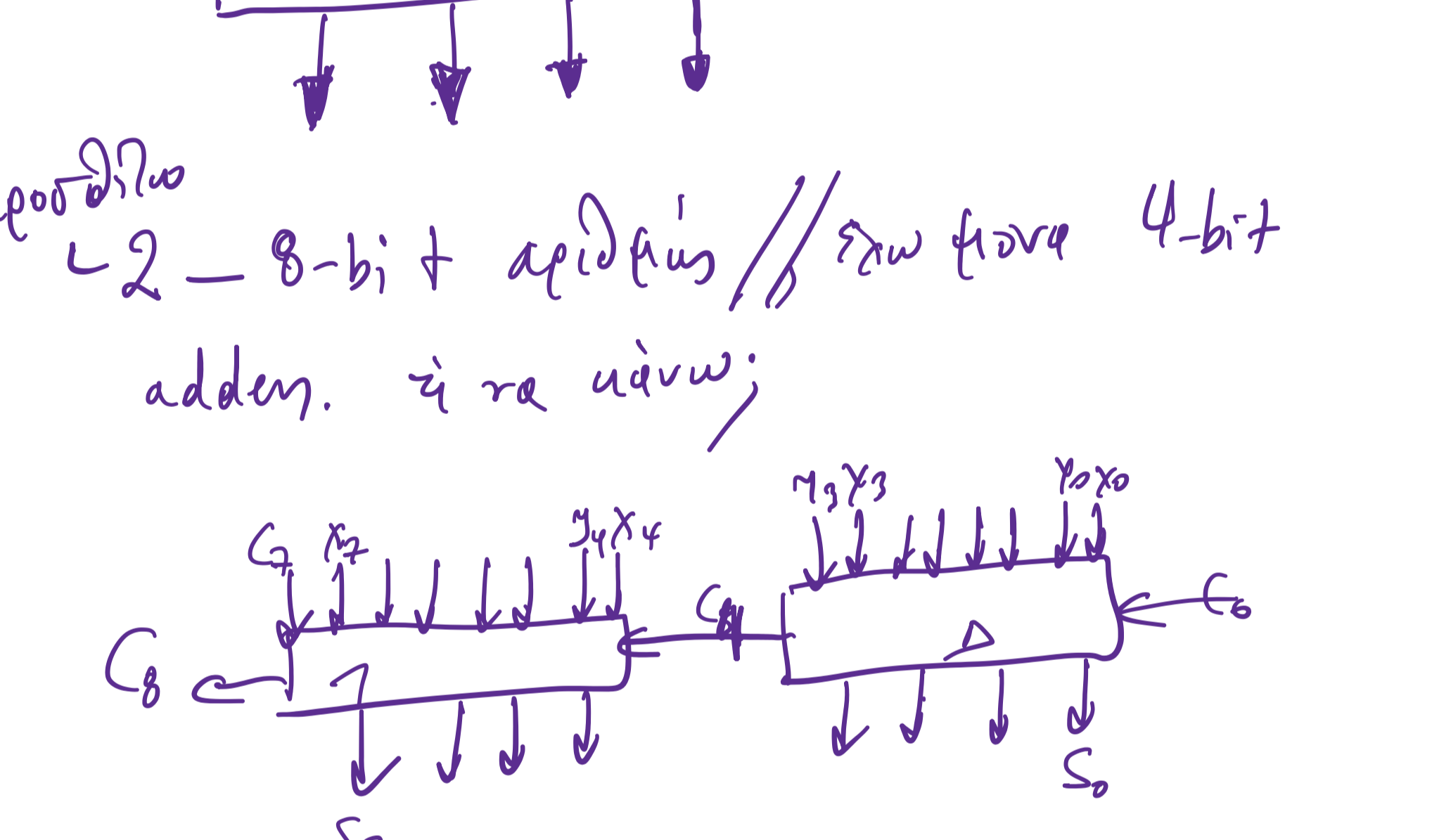
ΚΥΚΛΩΜΑ ΠΡΟΒΕΨΗΣ ΚΑΡΩΥΜΕΝΟΥ
CARRY LOOK AHEAD.

Co C1 C2 C3 ...
 Co = 0
 $C_1 = G_0 + P_0 C_0$
 $C_2 = G_1 + P_1 C_1 = G_1 + P_1 (G_0 + P_0 C_0) = G_1 + P_1 G_0 + P_1 P_0 C_0$
 $C_3 = G_2 + P_2 C_2 = G_2 + P_2 (G_1 + P_1 G_0 + P_1 P_0 C_0) = G_2 + P_2 G_1 + P_2 P_1 G_0 + P_2 P_1 P_0 C_0$
 $C_4 = G_3 + P_3 C_3 = G_3 + P_3 (G_2 + P_2 G_1 + P_2 P_1 G_0 + P_2 P_1 P_0 C_0) = G_3 + P_3 G_2 + P_3 P_2 G_1 + P_3 P_2 P_1 G_0 + P_3 P_2 P_1 P_0 C_0$

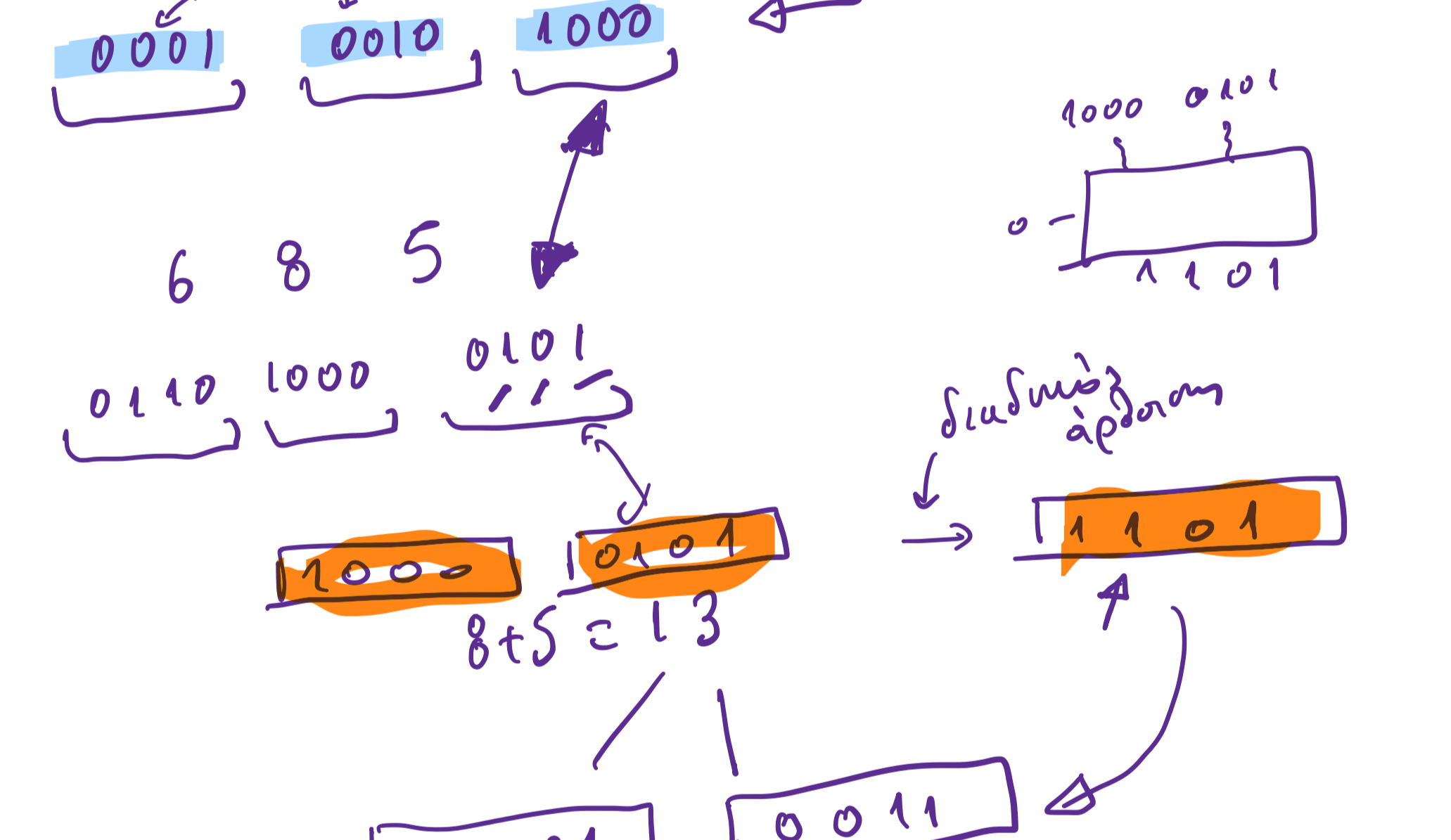


για n-bit carry lookahead.

Συνοψική καθυστέρηση (4)
n-bit carry look ahead → (4)



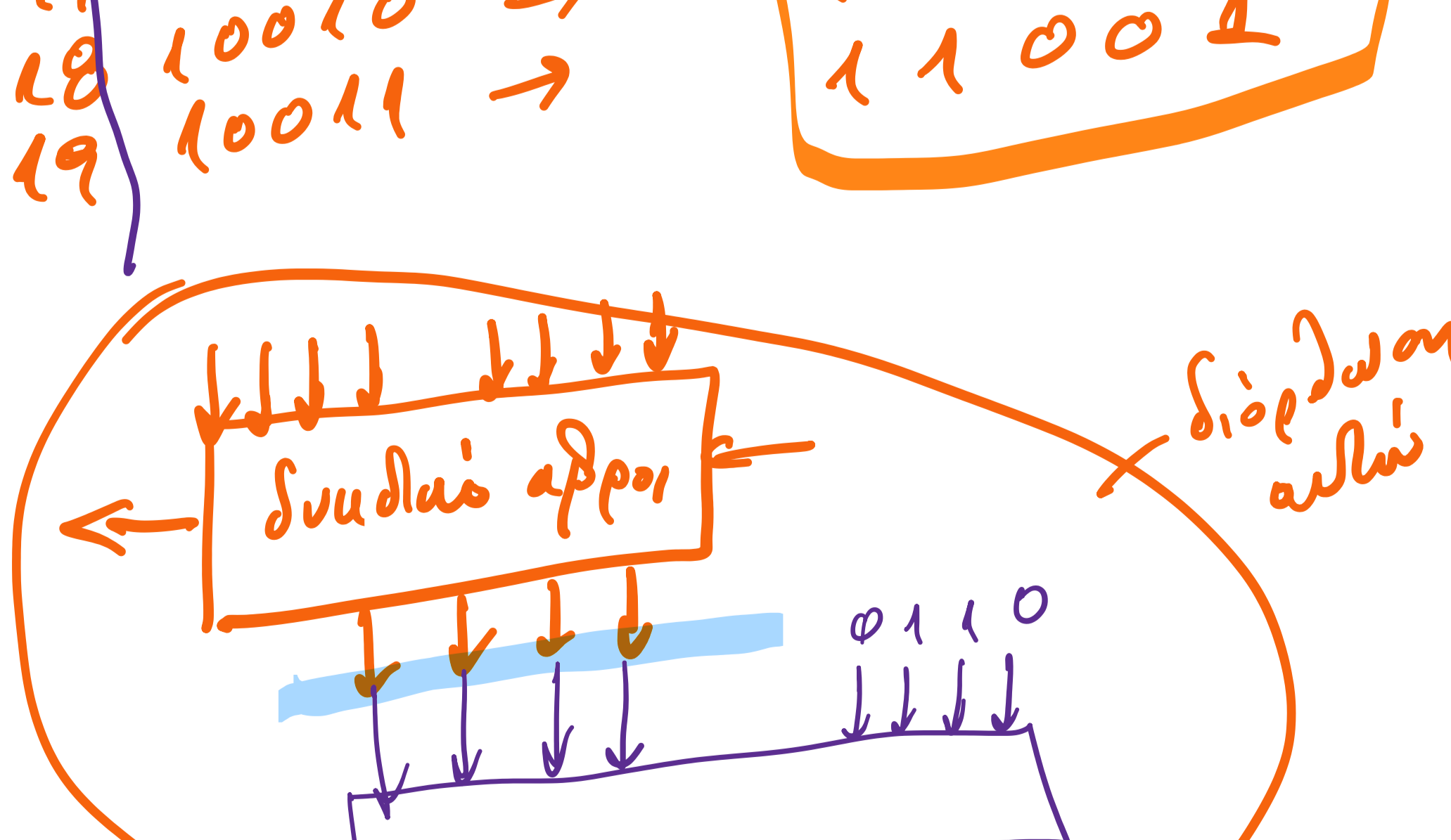
BCD- αθροιστής



αναστρέψω την αθροιστή είναι ≤ 9
έτσι κερν 0 διαδοχώς αθροιστής;
1010 + 0011 = 1000
5 3 8

du το αθροιστή των δύο διαδοχικών bits
10 → 1 0 0 0 0
11 → 1 0 0 0 1
12 → 1 0 0 1 0
19 → 1 1 0 0 1

Decimal	Binary	BCD
0	00000	00000
1	00001	00001
2	00010	00010
3	00011	00011
4	00100	00100
5	00101	00101
6	00110	00110
7	00111	00111
8	01000	01000
9	01001	01001
10	01010	10000
11	01011	10001
12	01100	10010
13	01101	10011
14	01110	10100
15	01111	10101
16	10000	10110
17	10001	10111
18	10010	11000
19	10011	11001



1) ΦΤΙΑΞΕ ΚΥΚΛΩΜΑ ΠΟΥ ΠΑΙΡΝΕΙ ΕΞΑΝ INPUT ΤΩΝ 5-bit αθροιστή και βγαίνει 1 εάν το αθροιστή ≥ 10

2) ΦΤΙΑΞΕ ΜΙΑ ΒΑΘΜΙΔΑ ΕΝΟΣ BCD ΑΘΡΟΙΣΤΗ

3) ΦΤΙΑΞΕ ΕΝΑΝ BCD αθροιστή για να προσθέσει 2 digit numbers
5387 + 9938