

①  $57,5 \rightarrow \text{IEEE 754}$

② 1 0 0 0 0 1 0 0 | 1 1 0 0 1 1 0 0 0 ...

$$57,5 = 111001,1 \cdot 2^{5+127=132}$$

②  $0x40B00000$

0100 0000 1011 0000 0000 0000 0000 0000

$$+ 1,01100... = 101,1 = +5,5$$

③

$$10000011 \rightarrow 01111101 = -125$$

④

$$\begin{array}{r} 142 - \\ 125 \\ \hline 17 \end{array}$$

$$142 = 10001110 +$$

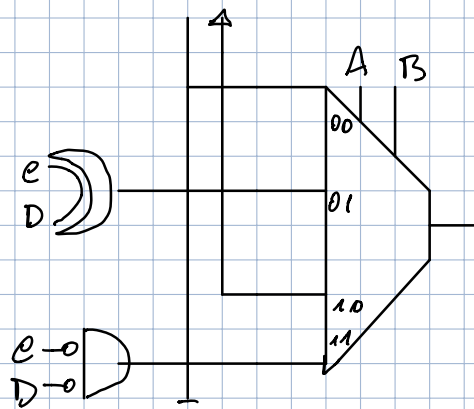
$$\begin{array}{r} 10000011 \\ 100010001 = 17, \text{ corretto} \end{array}$$

⑤

$$(A \text{ XOR } B)e \rightarrow [(A+B)(\bar{A}+\bar{B})]e$$

A	B	e	F	F <sub>d</sub>
0	0	0	0	0
0	0	1	0	0
0	1	0	0	0
0	1	1	1	1
1	0	0	0	0
1	0	1	1	1
1	1	0	0	0
1	1	1	0	0

⑥



$$F = (A+B)(e+D)(\bar{e}+\bar{D})(e+\bar{D})(\bar{e}+D)(\bar{e}+\bar{D})$$

e	D	X	A
0	0	0	1
0	1	1	0
1	0	1	0
1	1	0	0

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A	B	C	F	G
0	0	0	1	0
0	0	1	1	0
0	1	0	1	0
0	1	1	0	1
1	0	0	1	0
1	0	1	1	0
1	1	0	1	0
1	1	1	1	0

$$G = \bar{A} B C$$

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A	B	C	D	F	G
0	0	0	0	1	0
0	0	0	1	1	1
0	0	1	0	1	1
0	0	1	1	1	1
0	1	0	0	0	0
0	1	0	1	0	0
0	1	1	0	0	0
0	1	1	1	X	0
1	0	0	0	X	0
1	0	0	1	0	0
1	0	1	0	0	0
1	0	1	1	0	0
1	1	0	0	0	0
1	1	0	1	1	0
1	1	1	0	1	0
1	1	1	1	0	0

A \ B \ C \ D	00	01	11	10
00	0	1	1	1
01	0	0	0	0
11	0	0	0	0
10	0	0	0	0

$$G = \bar{A} \bar{B} D + \bar{A} \bar{B} C$$

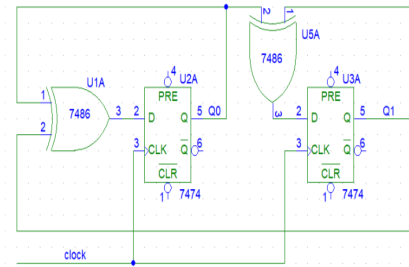
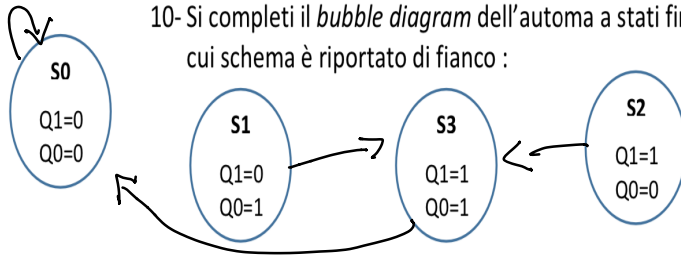
9

$2^3 = 8$  stati possibili  $\rightarrow$  5 inutilizzati

Non può giungere in uno stato inutilizzato

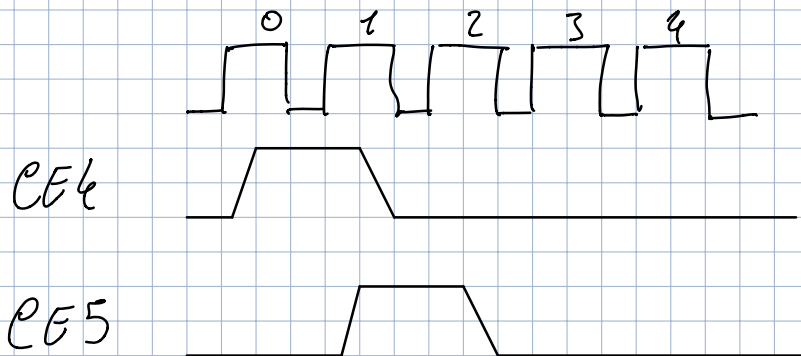
10

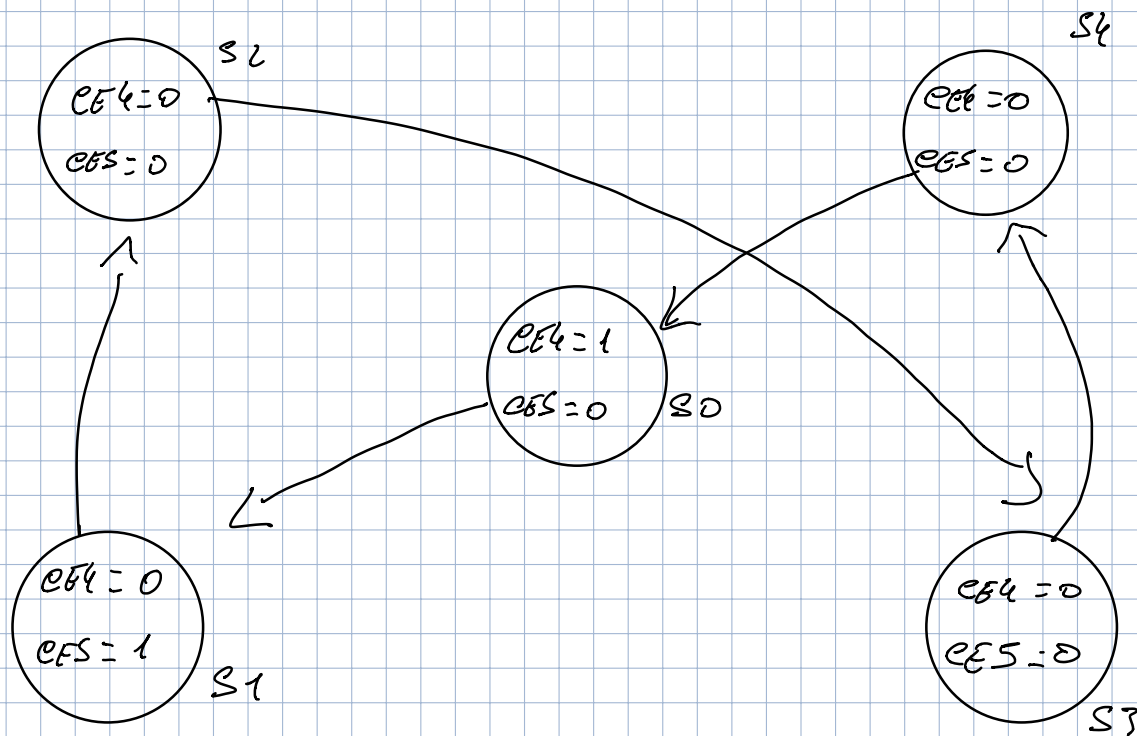
10- Si completi il *bubble diagram* dell'automa a stati finiti il cui schema è riportato di fianco :



Parte 2

①  $op \rightarrow R4 \quad \bullet \quad t_1$   
 $op_2 \rightarrow R5 \quad \bullet \quad t_2$





Funzioni prossime stato

$Q_2$	$Q_1$	$Q_0$	$Q'_2$	$Q'_1$	$Q'_0$
0	0	0	0	0	1
0	0	1	0	1	0
0	1	0	0	1	1
0	1	1	1	0	0
1	0	0	0	0	0
1	0	1	X	X	X
1	1	0	X	X	X
1	1	1	X	X	X

$$Q'_2 = \bar{Q}_1 Q_1 Q_0$$

$$Q'_1 = \bar{Q}_2 \bar{Q}_1 Q_0 + \bar{Q}_2 Q_1 \bar{Q}_0 = \bar{Q}_2$$

$$Q'_0 = \bar{Q}_2 \bar{Q}_1 \bar{Q}_0 + \bar{Q}_2 Q_1 \bar{Q}_0 = \bar{Q}_2 \bar{Q}_0$$

## Fonzioni uscite

$a_2$	$a_1$	$a_0$	4	5
0	0	0	1	0
0	0	1	0	1
0	1	0	0	0
0	1	1	0	0
1	0	0	0	0
1	0	1		
1	1	0		
1	1	1		

$$CF4 = \bar{Q}_2 \bar{Q}_1 \bar{Q}_0$$

$$CES = \bar{Q}, \bar{Q}, Q_0$$

②

$$n_2 = 5 - 6 = -1$$

[illegible]

③

c)  $2^8 = 256$  locazioni

b)

1- presente in TLB, pag 11111111  $\rightarrow$  pag 255

2- Pag 0 in TMP, bit di validità a 1, pag 249

### 3- Page fault