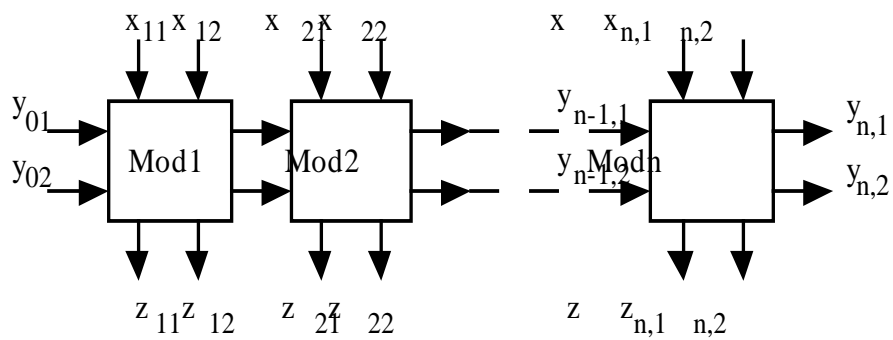


## LE RETI ITERATIVE

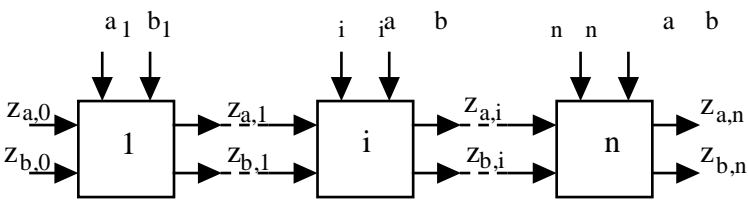


Rete iterativa con  $2n$  bit di ingresso e  $2n$  bit di uscita

Vantaggi: semplicità di progettazione e basso costo implementativo e di testing

Svantaggi: tempi di calcolo elevati (proporzionali al numero di celle)

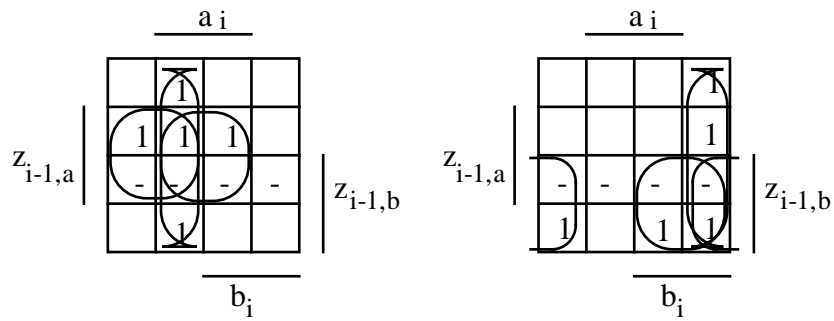
# CIRCUITI COMPARATORI



Comparatore per numeri di n bit

$z_A$	$z_B$	risultato
1	0	$A > B$
0	0	$A = B$
0	1	$A < B$
1	1	non ammessa

$z_{a,i-1}$	$z_{b,i-1}$	$a_i$	$b_i$	$z_{a,i}$	$z_{b,i}$
0	0	0	0	0	0
0	0	0	1	0	1
0	0	1	0	1	0
0	0	1	1	0	0
1	0	0	0	1	0
1	0	0	1	0	1
1	0	1	0	1	0
1	0	1	1	1	0
0	1	0	0	0	1
0	1	0	1	0	1
0	1	1	0	1	0
0	1	1	1	0	1



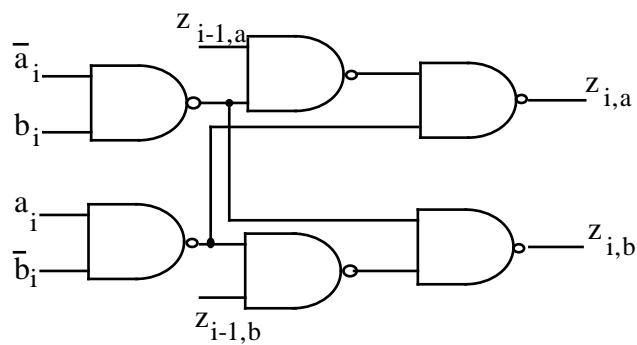
Mappe delle uscite della cella i-ma del comparatore

$$z_{i,a} = z_{i-1,a} \overline{a_i} + z_{i-1,a} \overline{b_i} + a_i b_i$$

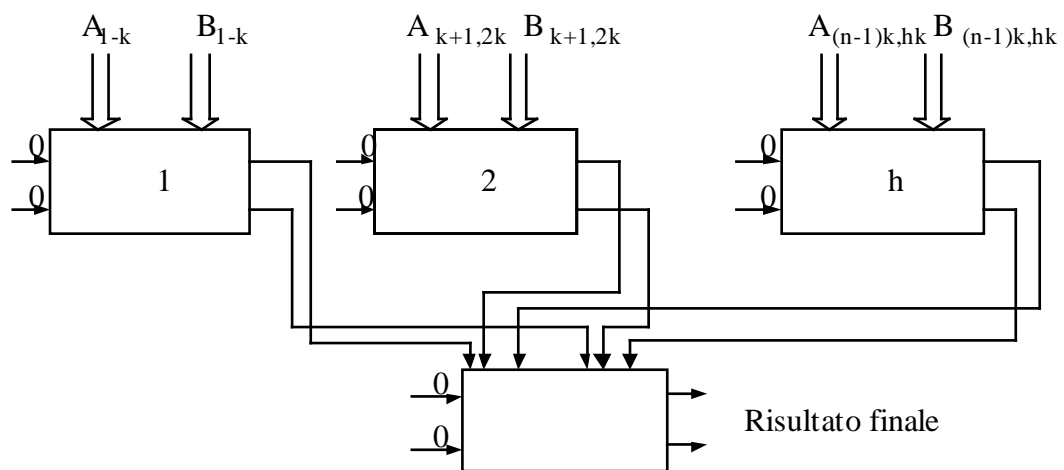
$$z_{i,b} = z_{i-1,b} \overline{b_i} + z_{i-1,b} \overline{a_i} + a_i b_i$$

oppure

$$z_{i,a} = z_{i-1,a} (a_i + \overline{b_i}) + a_i \overline{b_i} \quad ; \quad z_{i,b} = z_{i-1,b} (b_i + \overline{a_i}) + b_i \overline{a_i}$$

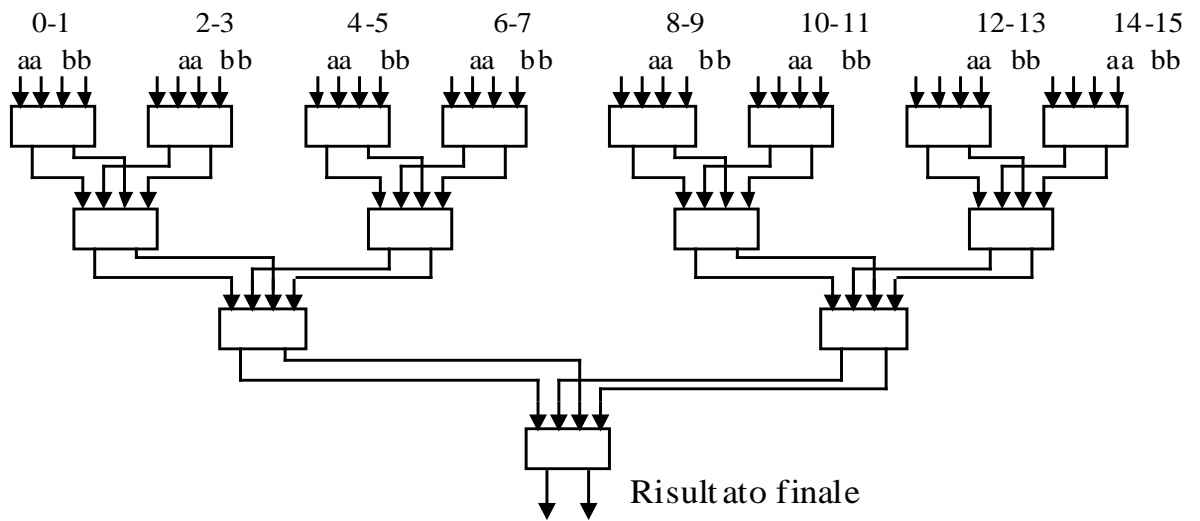


## Comparatori veloci



Comparatore veloce: struttura di interconnessione

## Comparatori ad albero binario



Comparatore ad albero binario per operandi di 16 bit