

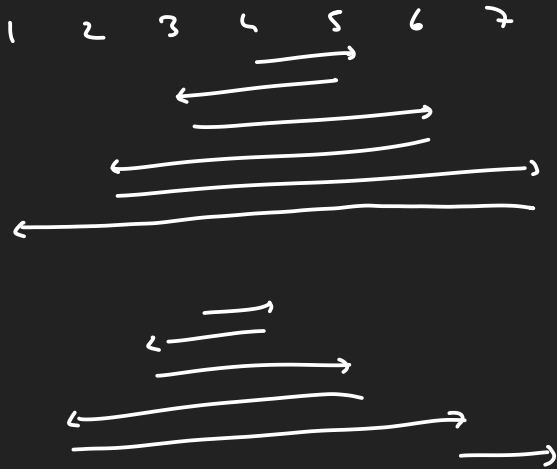
$$1) \text{ ARC} \rightarrow \text{R}$$

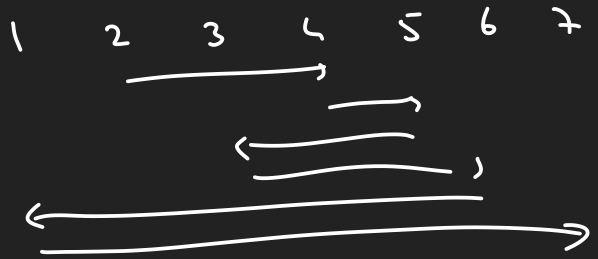
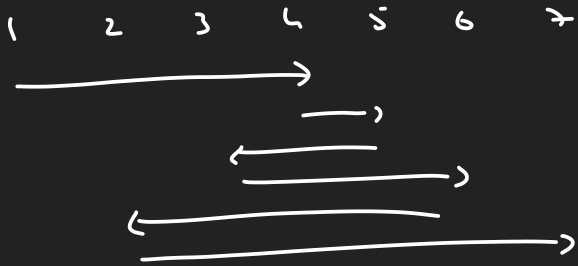
$$2) \text{ ARC} \rightarrow \text{AC}$$

$$\text{AARCC} \rightarrow \text{AC}$$

AARCCARCARC

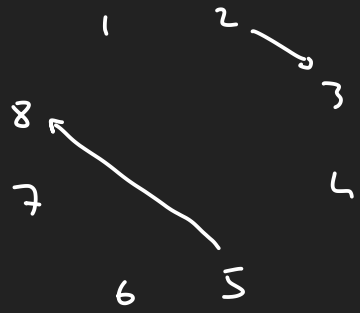
3 1 1





1 2 3 4 5 6 7 8

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| ? | 3 | ? | ? | 8 | ? | ? | ? |



| | | | | |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
| 2 | 3 | 1 | 3 | 2 |



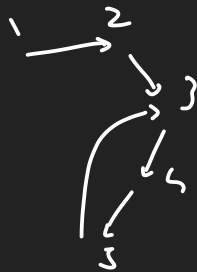
| | | | | |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
| 2 | 2 | 1 | 5 | 5 |

ogni cc

- ha solo archi interni

- ha n archi \rightarrow ha $\leq n$ archi "veri"
 $\geq n-1$

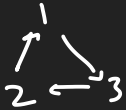
- è un ciclo o un tree + self loop
una linea



in quante conf. $\{1, 2, \dots, i\}$ è una cc?

$(i-1)!$ cicli

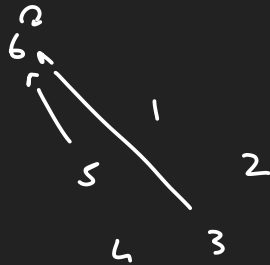
$i(i-1)(i-1)!$ linee



con i '?' ?

$dp[i] = \#$ cc
primi i archi

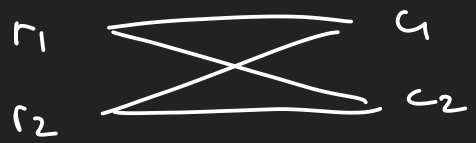
- i forma un self loop



| | |
|---|---|
| 1 | 1 |
| 1 | 2 |

| | | |
|---|---|---|
| 1 | 1 | 2 |
| 1 | 2 | 1 |
| 2 | 1 | 1 |

solito grafo bipartito
 rettangolo = ciclo lungo 4



- (r1, c1)
- (r1, c2)
- (r2, c1)
- (r2, c2)

f g

$$f(i) = i/25$$

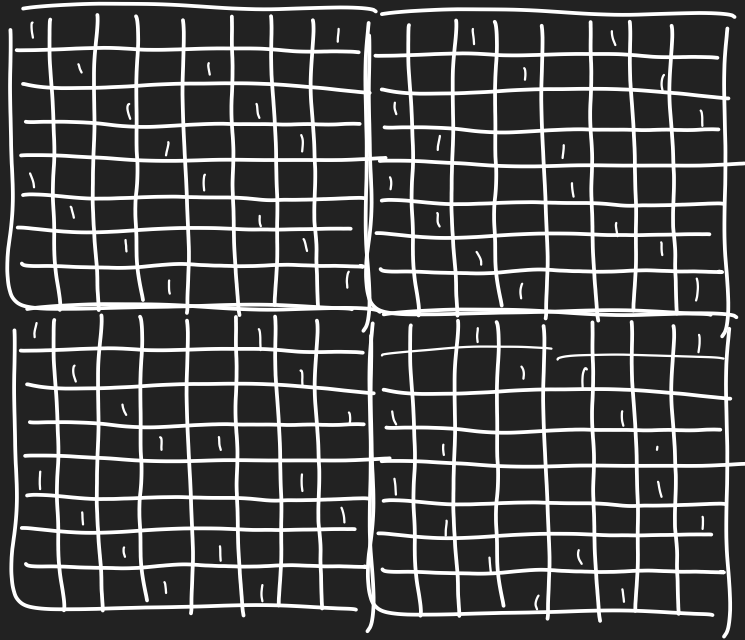
"scegli le diagonali giuste"

"scegli 20 interi in $\{0, 1, \dots, 624\}$ tali che le
diff. $\geq 2 \geq 2$ ^(in mod) siano distinte"

500 mask can popcount 20 e nessun rettangolo

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 |
| 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 |
| 1 | 1 | 1 | 2 | 2 | 2 | 3 | 3 | 3 |
| 3 | 3 | 3 | 1 | 1 | 1 | 2 | 2 | 2 |
| 2 | 2 | 2 | 3 | 3 | 3 | 1 | 1 | 1 |
| 1 | 2 | 3 | 3 | 1 | 2 | 2 | 3 | 1 |
| 3 | 1 | 2 | 2 | 3 | 1 | 1 | 2 | 3 |
| 2 | 3 | 1 | 1 | 2 | 3 | 3 | 1 | 2 |

| | | | |
|---|---|---|---|
| 1 | 1 | 2 | 2 |
| 2 | 2 | 1 | 1 |
| 1 | 2 | 1 | 2 |
| 2 | 1 | 2 | 1 |



1 1 2 2
 2 2 1 1
 1 2 1 2
 2 1 2 1

| | | | |
|---|---|---|---|
| 1 | 1 | 1 | 1 |
| 1 | 2 | 3 | 4 |
| 1 | 3 | 1 | 3 |
| 1 | 4 | 3 | 2 |

| | | | |
|---|---|---|---|
| 1 | 2 | 3 | 4 |
| 4 | 1 | 2 | 3 |
| 3 | 4 | 1 | 2 |
| 2 | 3 | 4 | 1 |

| | | | | |
|---|---|---|---|---|
| 1 | 1 | 1 | 1 | 1 |
| 1 | 2 | 3 | 4 | 5 |
| 1 | 3 | 5 | 2 | 4 |
| 1 | 4 | 2 | 5 | 3 |
| 1 | 5 | 4 | 3 | 2 |

| | | | | | | |
|---|---|---|---|---|---|----|
| 1 | 1 | 1 | 1 | 1 | — | 7 |
| 1 | 2 | 3 | 4 | 5 | — | 25 |
| 1 | 3 | 5 | 7 | 9 | — | |

