

## Problem H

### Bingo

Input: H.txt

A Bingo game is played by one gamemaster and several players. At the beginning of a game, each player is given a card with  $M \times M$  numbers in a matrix (See Figure 10).

$N_{11}$	$N_{12}$	$N_{13}$	• • •	$N_{1M}$
$N_{21}$	$N_{22}$	$N_{23}$	• • •	$N_{2M}$
$N_{31}$	$N_{32}$	$N_{33}$		$N_{3M}$
•	•		•	•
•	•		•	•
•	•		•	•
$N_{M1}$	$N_{M2}$	$N_{M3}$	• • •	$N_{MM}$

Figure 10: A Card

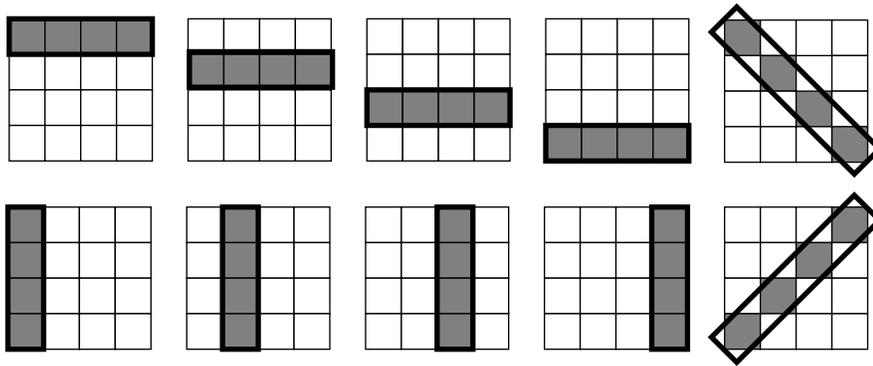


Figure 11: Bingo patterns of  $4 \times 4$  card

As the game proceeds, the gamemaster announces a series of numbers one by one. Each player punches a hole in his card on the announced number, if any.

When at least one ‘Bingo’ is made on the card, the player wins and leaves the game. The ‘Bingo’ means that all the  $M$  numbers in a line are punched vertically, horizontally or diagonally (See Figure 11).

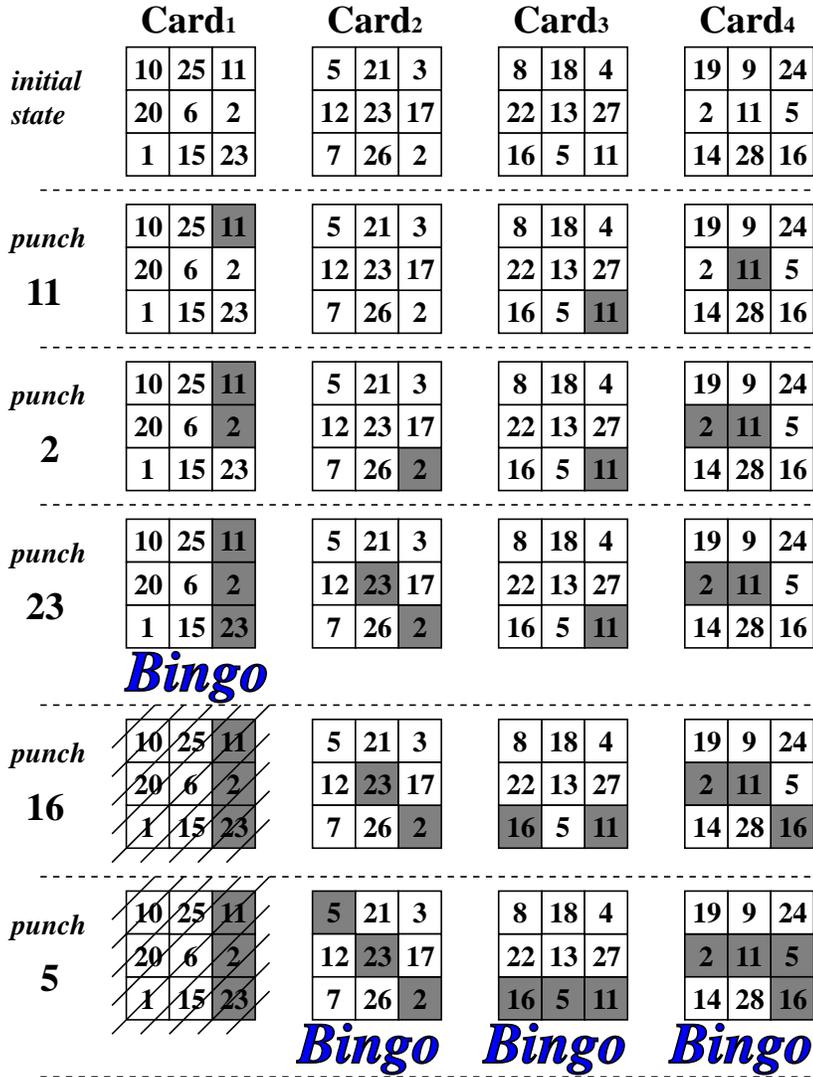


Figure 12: Example of Bingo Game Process



```

5 21 3 12 23 17 7 26 2
8 18 4 22 13 27 16 5 11
19 9 24 2 11 5 14 28 16
4 3
12 13 20 24 28 32 15 16 17
12 13 21 25 29 33 16 17 18
12 13 22 26 30 34 17 18 15
12 13 23 27 31 35 18 15 16
4 3
11 12 13 14 15 16 17 18 19
21 22 23 24 25 26 27 28 29
31 32 33 34 35 36 37 38 39
41 42 43 44 45 46 47 48 49
4 4
2 6 9 21 15 23 17 31 33 12 25 4 8 24 13 36
22 18 27 26 35 28 3 7 11 20 38 16 5 32 14 29
26 7 16 29 27 3 38 14 18 28 20 32 22 35 11 5
36 13 24 8 4 25 12 33 31 17 23 15 21 9 6 2
0 0

```

## Output for the Sample Input

```

5
4
12
0

```

For your convenience, sequences satisfying the condition (\*) for the first three datasets are shown below. There may be other sequences of the same length satisfying the condition, but no shorter.

```

11, 2, 23, 16, 5
15, 16, 17, 18
11, 12, 13, 21, 22, 23, 31, 32, 33, 41, 42, 43

```