
2. Bingo

Program Name: Bingo.java

Input File: bingo.dat

Bingo is a game played with 24 integers in the range [1, 75] placed randomly in a 5 x 5 matrix on a card and a free space placed in the middle square of the card. The five columns are named B, I, N, G, and O respectively from left to right. For a card to be valid, it must meet the following requirements:

B column can only have integers 1 through 15

I column can only have integers 16 through 30

N column can only have integers 31 through 45

G column can only have integers 46 through 60

O column can only have integers 61 through 75

There is exactly one free space (marked by an asterisk (*)) and it must be in 3rd square of the N column

B	I	N	G	O
3	17	33	49	64
6	21	44	56	73
14	25	*	59	69
9	16	45	46	61
5	30	37	60	70

You are to write a program that verifies that a given Bingo card meets the requirements above and is therefore a valid Bingo card.

Input

The first line will contain a single integer *n* that indicates the number of Bingo cards to follow. Each of the next *n* sets of 5 lines will contain a prospective Bingo card. Each card will have five integers on each line (except the line that has an asterisk (*) indicating the free space instead of an integer). The integers will be in the range [1,75]. No integer will appear more than once on a given card.

Output

For each card, print `VALID` if the card is a valid card or print `INVALID` if the card is not a valid card.

Example Input File

```
2
1 16 31 46 61
2 17 32 47 62
3 18 * 48 63
4 19 34 49 64
5 20 35 50 65
1 19 35 47 63
12 21 41 46 73
7 15 * 59 61
14 29 34 55 70
2 30 40 60 68
```

Example Output to Screen

```
VALID
INVALID
```