

Magic Square Problem

A magic square is a two-dimensional arrangement of positive integers with a special property: All rows, columns and diagonals total the same number. Below, for example, the 3-by-3 arrangement of 9 numbers is a magic square:

2	7	6	→15
9	5	1	→15
4	3	8	→15
↙15	↓15	↓15	↘15

Your assignment is to read a square of numbers as input and determine whether it is a magic square or not. Your only concern is that the totals are all the same: in particular, you **do not** need to check whether a number is duplicated; you **do not** need to check whether the square uses the numbers 1 through N^2 .

Input Format

Your program will read from a data file called **magic.txt**. The first line will contain a positive integer $2 < N < 6$ which represents the number of columns and rows in the square. The next N lines will each contain N positive integers separated by spaces.

Output Format

Your program will write to standard output. Your program should produce a single line of output on a line by itself. The line will contain either MAGIC or NOT MAGIC.

Sample Input and Corresponding Sample Output

Sample Input

```
3
2 7 6
9 5 1
4 3 8
3
1 2 3
4 5 6
7 8 9
4
7 12 1 14
2 13 8 11
16 3 10 5
9 6 15 4
```

Sample Output

```
MAGIC
NOT MAGIC
MAGIC
```