CCC '16 J2 - Magic Squares

Magic Squares are square arrays of numbers that have the interesting property that the numbers in each column, and in each row, all add up to the same total.

Given a 4×4 square of numbers, determine if it is magic square.

Input Specification

The input consists of four lines, each line having 4 space-separated integers.

Output Specification

Output either `magic` if the input is a magic square, or `not magic` if the input is not a magic square.

Sample Input 1

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

Output for Sample Input 1

```
magic
```

Explanation for Output for Sample Input 1

Notice that each row adds up to 34, and each column also adds up to 34.

Sample Input 2

```
5 10 1 3
10 4 2 3
1 2 8 5
3 3 5 0
```

Output for Sample Input 2

```
not magic
```

Explanation for Output for Sample Input 2

Notice that the top row adds up to 19, but the rightmost column adds up to 11.