CCC '16 J2 - Magic Squares

Time limit: 2.0s **Memory limit:** 256M

Canadian Computing Competition: 2016 Stage 1, Junior #2

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 a 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.