

## Factovisors (UVA 10139)

PC/Uva IDs: 110704/10139, Popularity: A, Success rate: ave, Level: 2

The factorial function,  $n!$  is defined as follows for all non-negative integers  $n$ :

$$0! = 1$$

$$n! = n * (n-1)! \quad (n > 0)$$

We say that  $a$  divides  $b$  if there exists an integer  $k$  such that

$$k * a = b$$

The input to your program consists of several lines, each containing two non-negative integers,  $n$  and  $m$ , both less than  $2^{31}$ . For each input line, output a line stating whether or not  $m$  divides  $n!$ , in the format shown below.

### Sample Input

```
6 9
6 27
20 10000
20 100000
1000 1009
```

### Output for Sample Input

```
9 divides 6!
27 does not divide 6!
10000 divides 20!
100000 does not divide 20!
1009 does not divide 1000!
```