DWITE '07 R3 #1 - Yet Another Primes Question

Time limit: 2.0s **Memory limit:** 64M

DWITE Online Computer Programming Contest, December 2007, Problem 1

Tony is busy writing his University exams, and lacks creativity. So he's making you write what you've already done in the last DWITE round, but differently. Instead of *semiprimes*, this time you're interested in numbers with 3 **unique** prime factors.

The input will contain five integers, one per line. $1 \leq N \leq 1000$.

The output will contain five lines, stating if the supplied integers were `valid` or `not`.

Note: you're looking for **unique** factors. For example, 12 has three prime factors: 2, 2, 3. But it's only two unique numbers: 2 and 3. Thus 12 is *not* what is asked for.

Sample Input

```
10
12
15
30
105
```

Sample Output

```
not
not
not
valid
valid
```

Problem Resource: DWITE