DWITE '07 R5 #2 - Number of factors

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

DWITE Online Computer Programming Contest, February 2008, Problem 2

Integer numbers are made up of *factors*, smallest numbers that when multiplied together form the original number. Factors are always prime. 1 and the original number itself don't count as factors. If a number has no factors, then that number is itself prime. For example, 12 is made up of three factors: $2 \times 2 \times 3$ (even though 4×3 is 12, 4 itself has two factors: 2×2).

We care about this because factors are often involved in cryptography:

> When the numbers are very large, no efficient integer factorization algorithm is publicly known; a recent effort which factored a 200-digit number (RSA-200) took eighteen months and used over half a century of computer time.

Though we'll be dealing with *much* smaller numbers for now.

The input will contain 5 lines, integers $2 \leq N \leq 32$.

The output will contain 5 lines – a total number of factors in a number.

Sample Input

```
3
4
5
12
32
```

Sample Output

```
0
2
0
3
5
```

Problem Resource: DWITE