

## 10127 Ones

Given any integer  $0 \leq n \leq 10000$  not divisible by 2 or 5, some multiple of  $n$  is a number which in decimal notation is a sequence of 1's. How many digits are in the smallest such a multiple of  $n$ ?

### Input

A file of integers at one integer per line.

### Output

Each output line gives the smallest integer  $x > 0$  such that  $p = \sum_{i=0}^{x-1} 1 \times 10^i = a \times b$ , where  $a$  is the corresponding input integer, and  $b$  is an integer greater than zero.

### Sample Input

```
3
7
9901
```

### Sample Output

```
3
6
12
```

