Pisano Factors

Given an integer n.

Find how many integers c are there such that their pisano period is a factor of n.

$1 \le c \le 10^5$

There are mutiple test cases.

Input

The first line contains number of test cases, $1 \le t \le 100$

Next t lines contain an integer n each.

$1 \le n \le 10^9$

Output

Output the answer to each test case on a separate line.

Example

Input:
```
3
6
9
10
```

Output:
```
3
2
2
```