# Multiply!

HackerRank

**Problem Statement**

You are given an integer $n$. Your task is to process the requests of the form:

Given an integer $x$, update the value of $n$ as $n = n \times x$, then print the sum of all natural divisors of $n$ modulo $(10^9 + 7)$.

**Input Format**

The first line contains two space separated integers $n$ and $q$ - the initial value of $n$ and the number of requests, correspondingly.

The next $q$ lines contain the value $x$ of each request.

**Constraints**

$1 \leqslant n, q \leqslant 10^5$
$1 \leqslant x \leqslant 10^6$

**Output Format**

For each request print the sum of divisors of the new updated value of $n$.

**Sample Input**

```
1 3
5
3
10
```

**Sample Output**

```
6
24
372
```

**Explanation**

After first request $n = 5$ and $1 + 5 = 6$

After second requset $n = 5 \times 3 = 15$.

Divisors of $15$ are $1, 3, 5, 15$. And $1 + 3 + 5 + 15 = 24$.

After third request $n = 3 \times 10 \times 5 = 150$.

Divisors of $150$ are $1, 2, 3, 5, 6, 10, 15, 25, 30, 50, 75, 150$.

And $1 + 2 + 3 + 5 + 6 + 10 + 15 + 25 + 30 + 50 + 75 + 150 = 372$.