

Project Euler #248: Numbers for which Euler's totient function equals 13!

This problem is a programming version of [Problem 248](#) from [projecteuler.net](#)

The first number n for which $\phi(n) = 13!$ is **6227180929**.

Perform several queries each of which is to find the k -th number n for which $\phi(n) = m$.

The time restriction is a double of the usual time restriction.

Input Format

The first line of each test file contains two integers separated by single spaces, which are m and q , where q is the number of queries. q lines follow, each containing the corresponding k .

Constraints

- $1 \leq m \leq 10^{12}$
- $1 \leq q \leq 100$
- $1 \leq k \leq$ number of of such n 's for which $\phi(n) = m$

Output Format

Print exactly q lines, with the answer to the corresponding query on each line.

Sample Input 0

```
6227020800 1
1
```

Sample Output 0

```
6227180929
```