Chocolate game

Ashish has M distinct prime numbers and n chocolates. He plays a game where in each turn, he picks any one of the prime numbers p and tries to divide the chocolates into groups of exactly p. As long as atleast p chocolates are left over, further groups are formed. In the end, if there are any chocolates left over, they are discarded. The game ends when there are no chocolates remaining. You are given Q queries. Help Ashish determine the minimum number of turns required to end the game if there are n_i chocolates in the i^{th} game. He can choose the same prime multiple times, and the primes in any order he wants.

Input Format:

- The first line contains integers M and Q, the number of prime numbers, and the number games.
- The next line contains M distinct prime numbers p_i in ascending order that can be used.
- The next Q lines contain a single integer n_i, the number of chocolates that Ashish starts with in the i^{th} game.

Output:

Print Q lines, the i^{th} line must contain "oo" (two lower case letters o, meaning ∞) if the i^{th} game will never end, otherwise a single integer - the minimum number of turns to end the i^{th} game.

Constraints:

- $1 \leq M, Q \leq 10^5$
- $1 \leq p_i, n_i \leq 10^7$
- $1 \leq p_i \leq N$ or $p_i = 0$ if i is the root.

Subtasks

- **Subtask 1 (20 points)**: $1 \leq M, n_j, Q \leq 10^4$
- **Subtask 2 (20 points)**: $Q = 1$
- **Subtask 3 (60 points)**: original constraints.

Sample Input:

2 2 2 3 5 6

Sample Output:

3 oo

Sample Explanation:

In case 1, there are $n = 5$ chocolates. Taking $p = 3, 2$ chocolates are discarded, so $n = 3$ now. Then taking $p = 2, 1$ more chocolate is discarded, so $n = 2$. Lastly, taking $p = 3, n = 0$.