



Problem Prime Sieve

Time Limit 1 second

Input

The first line of input consists of two integers n , q , where $1 \leq n \leq 10^8$ and $1 \leq q \leq 20000$. Then follow q lines, each containing an integer x satisfying $1 \leq x \leq n$.

Output

On the first line of output, write one line giving the number of prime numbers less than or equal to n . Then for each query x , output 1 if x is a prime and output 0 if x is composite.

Sample Input 1	Sample Output 1
9973 6	1229
1	0
2	1
3	1
4	0
9972	0
9973	1