

## 6 In Prime Shape

You have designed new cryptography system that is based on using numbers that can be expressed as the products of a particular set of prime numbers. Given a set  $P = \{p_1, \dots, p_n\}$  of primes, a positive integer  $q$  is said to be *P-divisible* if  $q$  is evenly divisible by no prime number other than the numbers of  $P$ . For example, if  $P = \{2, 5, 7\}$ , the numbers 4 ( $= 2^2$ ), 100 ( $= 2^2 \cdot 5^2$ ), 70 ( $= 2 \cdot 5 \cdot 7$ ), and 1400 ( $= 2^4 \cdot 5^3 \cdot 7$ ) are all *P-divisible*, whereas 6 (divisible by 3), 26 (divisible by 13), and 53 (divisible by 53) are *not P-divisible*.

Given a set  $P$  of primes, your cryptography system relies on the fact that there are lots of *P-divisible* numbers. To check this, write a program, which given a set  $P$  of primes and a positive integer  $M$ , computes the number of *P-divisible* numbers that are less than or equal to  $M$ .

You may assume that  $n \leq 10^3$  and  $M \leq 10^9$ .

Input and output files can be found at: <http://challengebox.cs.umd.edu/2019/Prime>

### Input:

The first line contains the two numbers  $n$  and  $M$ , separated by a space. This is followed by  $n$  lines, each containing a prime number  $p_1, p_2, \dots, p_n$  of  $P$ . You may assume they are distinct.

### Output:

A single integer indicating the number of *P-divisible* numbers not exceeding  $M$ .

### Example:

Given  $P = \{2, 5, 7\}$  and  $M = 20$ , there are 10 *P-divisible* numbers that do not exceed 20 (namely, 1, 2, 4, 5, 7, 8, 10, 14, 16, and 20).

Input:	Output:
3 20	10
2	
5	
7	