British Informatics Olympiad Final

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Sequence

Given some prime numbers, we can generate an increasing sequence of all the positive integers, greater than one, that are divisible by these prime numbers but no others. For example, the sequence generated by the three prime numbers 2, 3 & 5 begins 2, 3, 4, 5, 6, 8, 9, 10, 12, 15, ...

Write a program that first inputs an integer n ($1 \leq n \leq 1000$) indicating the number of prime numbers used to generate the sequence. This will be followed by n lines, the i^{th} of which will contain the prime number p_i ($2 \leq p_i \leq 10000$); the input will not contain any duplicated primes and the primes will be given in increasing order. These lines will be followed by a line containing an integer j ($1 \leq j < 2^{21}$).

You should output a single integer indicating the j^{th} number in the sequence generated by the primes $p_1, \ldots, p_n$. You will not be required to produce an answer $\geq 2^{31}$.

Sample Input

```
3
2
3
5
1000
```

Sample Output

```
51840000
```