Least Multiple

Time limit: 1.0s **Memory limit:** 512M

Given a positive integer M, Bob needs to find the minimum **positive** integer N so that $N! \equiv 0 \pmod{M}$.

Since M is huge, Bob will give you K integers, denoted as $e_1, e_2, \ldots, e_K$, such that $M = \prod_{i=1}^{K} p_i^{e_i}$, where p_i is the i-th smallest prime number. It is guaranteed that $p_i \cdot e_i \leq 10^{18}$

Input Specification

The first line of input contains an integer T $(1 \leq T \leq 10^4)$, the number of test cases.

Each of the following T blocks contains two lines of input. The first line contains an integer K $(1 \leq K \leq 100)$, the number of prime factors. The second line contains K integers e_i $(0 \leq p_i \cdot e_i \leq 10^{18})$, indicating the i-th prime's exponent.

Output Specification

Output one integer for each test case, the smallest positive integer N so that $N! \equiv 0 \pmod{M}$.

Constraints

Subtask	Points	Additional constraints
1	10	$T = 1$, $p_i \cdot e_i \leq 10^5$.
2	25	$T \leq 1000$, $p_i \cdot e_i \leq 1000$.
3	30	$T \leq 10^3$, $p_i \cdot e_i \leq 10^{18}$.
4	35	No additional constraints.

Sample Input

```
1
5
1 1 1 1 1
```

Sample Output

```
11
```

Explanation

$M = 2^1 \times 3^1 \times 5^1 \times 7^1 \times 11^1 = 2310$, and the minimum N is 11.