Problem M. Value

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	256 megabytes

Pang believes that one cannot make an omelet without breaking eggs.

For a subset A of $\{1, 2, \ldots, n\}$, we calculate the score of A as follows:

1. Initialize the score as 0.
2. For any $i \in A$, add a_i to the score.
3. For any pair of integers (i, j) satisfying $i \geq 2$, $j \geq 2$, $i \in A$ and $j \in A$, if there exists positive integer $k > 1$ such that $i^k = j$, subtract b_j from the score.

Find the maximum possible score over the choice of A.

Input

The first line contains a single integer n ($1 \leq n \leq 100000$).

The second line contains n integers $a_1, a_2, \ldots, a_n$ ($1 \leq a_i \leq 1000000000$).

The third line contains n integers $b_1, b_2, \ldots, b_n$ ($1 \leq b_i \leq 1000000000$).

Output

Print a single integer x — the maximum possible score.

Examples

standard input	standard output
4 1 1 1 2 1 1 1 1	4
4 1 1 1 1 1 1 1 2	3