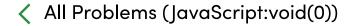
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Problem

Submissions



The Duality Task

Accuracy: 40.53% Submissions: 296 Points: 25

The **duality** of array **A** is defined as the maximum length among all nonempty subsequences (https://en.wikipedia.org/wiki/Subsequence) of array **A** whose greatest common divisor (https://en.wikipedia.org/wiki/Greatest common divisor) is greater than 1.

You are given two arrays, **A** and **B**, of the same size **N**. Consider a new array **C** of size **N** initially equal to **A**. In one operation, you can replace any element of **C** with any value. The **beauty** of array **C** is defined as the number of indices **i** $(1 \le i \le N)$ where **C**_i and **B**_i have the **same** value.

Find the **maximum** possible beauty of array **C** such that the duality of array **C** is **greater than or equal to** the duality of array **A** by performing any number of operations.

Input Format:

The first line of the input contains a single integer \mathbf{T} denoting the number of test cases. The description of \mathbf{T} test cases is as follows:

- The first line of each test case contains integer **N**, the array **A** and **B** size.
- The second line contains N space-separated integers A_1 , A_2 ,..., A_N .
- The third line contains \mathbf{N} space-separated integers, $\mathbf{B_1}$, $\mathbf{B_2}$,..., $\mathbf{B_N}$.

Output Format:

For each test case, print the maximum possible answer followed by a newline character.

Note: The generated output is white space sensitive, do not add any extra spaces on unnecessary newline characters.

Constraints:

 $1 \le \mathbf{T} \le 10^4$

 $1 \le N \le 2 * 10^5$

 $1 \le A_i, B_i \le 10^6$

the sum of **N** over all test cases does not exceed $5 * 10^5$