

Coprime Pairs

Mr. Yagami is playing a game of arrays. He is given two random arrays **A** and **B** consisting of **N** positive integer elements. Game starts by Mr. Yagami assigning **0** or **1** to each element in **A** and **B**.

After this assignment is done, a graph is constructed with a node for each element in the array A and B (**2N** nodes) and no edges. The game proceeds with a valid move being defined in the following way:

- One of the arrays from **A** or **B** is selected. From the selected array, an element which has been marked **0** is chosen. Let us call this element as **X**.
- A set of elements, **Y**, are chosen from the array, which was not chosen in the first step, such that all elements of **Y** should be marked as **1** and all elements of **Y** should be greater than **X** and no element of **Y** should be coprime to **X**.
- Finally an edge is drawn from the node labelled **X** to all the nodes corresponding to the elements in set **Y**. There can only be a single edge between any **2** nodes in the graph.

He can make as many valid moves. Mr. Yagami receives **1** point for each edge that is drawn in the graph.

Mr. Yagami is very clever, so he makes the initial assignment in such a way that it maximizes the number of points he receives in the game. You have to return the maximum number of points that Mr. Yagami can receive.

Input Format:

The first line of the input contains a single integer, **N** ($1 \leq N \leq 40$)

The second line of input contains **N** integers separated by a single space character, which represent the elements of the array **A**. ($2 \leq A[i] \leq 10^9$)

Similarly, the last line of input also contains **N** integers separated by a single space character, which represent the elements of the array **B**. ($2 \leq B[i] \leq 10^9$)

Output Format:

A single integer representing the maximum score which Mr. Yagami can receive.

Sample Input:

```
4
16 3 2 9
12 18 13 4
```

Sample Output:

```
8
```

Explanation:

He picks 2 from first array. So he gets to put 3 edges ie. 2->4, 2->12, 2->18.

Next he picks 3 from the first array. So he gets to put 2 edges ie. 3->12, 3->18.

Next he picks 9 from the first array. So he gets to put 2 edges ie. 9->12, 9->18.

Next he picks 16 from the first array. So he gets to put 1 edge ie. 16->18. Total edges=8.

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