Between Two Sets

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Consider two sets of positive integers, $A = \{a_0, a_1, \ldots, a_{n-1}\}$ and $B = \{b_0, b_1, \ldots, b_{m-1}\}$. We say that a positive integer, x, is *between* sets A and B if the following conditions are satisfied:

1. All elements in A are factors of x.
2. x is a factor of all elements in B.

Given A and B, find and print the number of integers (i.e., possible x's) that are *between* the two sets.

Input Format

The first line contains two space-separated integers describing the respective values of n (the number of elements in set A) and m (the number of elements in set B).
The second line contains n distinct space-separated integers describing $a_0, a_1, \ldots, a_{n-1}$.
The third line contains m distinct space-separated integers describing $b_0, b_1, \ldots, b_{m-1}$.

Constraints

- $1 \leq n, m \leq 10$
- $1 \leq a_i \leq 100$
- $1 \leq b_i \leq 100$

Output Format

Print the number of integers that are considered to be *between* A and B.

Sample Input

```
2 3
2 4
16 32 96
```

Sample Output

```
3
```

Explanation

The integers that are *between* $A = \{2, 4\}$ and $B = \{16, 32, 96\}$ are 4, 8, and 16.

Submissions: 429
Max Score: 10
Difficulty: Easy

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Current Buffer (saved locally, editable) C#

```
1 using System;
2 using System.Collections.Generic;
```

```
using System.IO;
using System.Linq;
class Solution {

    static void Main(String[] args) {
        string[] tokens_n = Console.ReadLine().Split(' ');
        int n = Convert.ToInt32(tokens_n[0]);
        int m = Convert.ToInt32(tokens_n[1]);
        string[] a_temp = Console.ReadLine().Split(' ');
        int[] a = Array.ConvertAll(a_temp,Int32.Parse);
        string[] b_temp = Console.ReadLine().Split(' ');
        int[] b = Array.ConvertAll(b_temp,Int32.Parse);

        int ans = 0;

            for (int x = a.Max(); x <= b.Min(); x++)
            {
                int i;
                for ( i = 0; i < n; i++)
                {
                    if (x % a[i] != 0)
                    {
                        break;
                    }
                }
                int j;
                for ( j = 0; j < m; j++)
                {
                    if (b[j] % x != 0)
                    {
                        break;
                    }
                }
                if (i == n && j == m)
                {
                    ans++;
                }
            }

            Console.WriteLine(ans);


    }
}

```

Line: 31 Col: 30

Upload Code as File Test against custom input Run Code Submit Code

Congrats, you solved this challenge!

- ✔ Test Case #0
- ✔ Test Case #1
- ✔ Test Case #2
- ✔ Test Case #3
- ✔ Test Case #4
- ✔ Test Case #5
- ✔ Test Case #6
- ✔ Test Case #7

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