



## Between Two Sets ★

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Problem

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There will be two arrays of integers. Determine all integers that satisfy the following two conditions:

1. The elements of the first array are all factors of the integer being considered
2. The integer being considered is a factor of all elements of the second array

These numbers are referred to as being between the two arrays. Determine how many such numbers exist.

### Example

 $a = [2, 6]$  $b = [24, 36]$ 

There are two numbers between the arrays: **6** and **12**.

$6\%2 = 0$ ,  $6\%6 = 0$ ,  $24\%6 = 0$  and  $36\%6 = 0$  for the first value.

$12\%2 = 0$ ,  $12\%6 = 0$  and  $24\%12 = 0$ ,  $36\%12 = 0$  for the second value. Return **2**.

### Function Description

Complete the getTotalX function in the editor below. It should return the number of integers that are between the sets.

getTotalX has the following parameter(s):

- int a[n]: an array of integers
- int b[m]: an array of integers

### Returns

- int: the number of integers that are between the sets

### Input Format

The first line contains two space-separated integers, **n** and **m**, the number of elements in arrays **a** and **b**.

The second line contains **n** distinct space-separated integers  $a[i]$  where  $0 \leq i < n$ .

The third line contains **m** distinct space-separated integers  $b[j]$  where  $0 \leq j < m$ .

### Constraints

- $1 \leq n, m \leq 10$
- $1 \leq a[i] \leq 100$
- $1 \leq b[j] \leq 100$

### Sample Input

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

### Sample Output

```
3
```

**Explanation**

2 and 4 divide evenly into 4, 8, 12 and 16.

4, 8 and 16 divide evenly into 16, 32, 96.

4, 8 and 16 are the only three numbers for which each element of a is a factor and each is a factor of all elements of b.

Change Theme

Language

Python 3



```

34 37 def getTotalX(a, b):
38     gcd_b = get_gcd(b)
39     if gcd_b % lcm_a != 0:
40         return 0
41
42     target = gcd_b // lcm_a
43     count = 0
44     for i in range(1, int(math.sqrt(target)) + 1):
45         if target % i == 0:
46             if i == target // i:
47                 count += 1
48             else:
49                 count += 2
50     return count
51
52 if __name__ == '__main__':
53     fptr = open(os.environ['OUTPUT_PATH'], 'w')
54
55     first_multiple_input = input().rstrip().split()
56
57     n = int(first_multiple_input[0])
58
59     m = int(first_multiple_input[1])
60
61     arr = list(map(int, input().rstrip().split()))
62
63     brr = list(map(int, input().rstrip().split()))
64
65     total = getTotalX(arr, brr)
66
67     fptr.write(str(total) + '\n')
68
69     fptr.close()
70

```

EMACS

Line: 38 Col: 1

Upload Code as File



Test against custom input

Run Code

Submit Code

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30%

588.8/850

Problem Solving  
★★★★


## Congratulations

Next Challenge


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✓ Test case 0

Compiler Message

✓ Test case 1 


Success


✓ Test case 2 

Input (stdin)

Download

1	2 3
2	2 4
3	16 32 96

✓ Test case 3 

✓ Test case 4 

Expected Output

Download

1	3
---	---

✓ Test case 5 

✓ Test case 6 