# **Between Two Sets ■**



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

- 1. All elements in  $\boldsymbol{A}$  are factors of  $\boldsymbol{x}$ .
- 2.  $\boldsymbol{x}$  is a factor of all elements in  $\boldsymbol{B}$ .

In other words, some x is between A and B if that value of x satisfies  $x \mod a_i = 0$  for every  $a_i$  in A and also satisfies  $b_i \mod x = 0$  for every  $b_i$  in B. For example, if  $A = \{2, 6\}$  and  $B = \{12\}$ , then our possible x values are  $x \mod a_i = 12$ .

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 n) and n (the number of elements in set n).

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

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

#### **Output Format**

Print the number of integers that are considered to be between  $\boldsymbol{A}$  and  $\boldsymbol{B}$ .

## Sample Input

2 3 2 4 16 32 96

## Sample Output

3

#### Explanation

There are three  $\boldsymbol{x}$  values between  $\boldsymbol{A} = \{2,4\}$  and  $\boldsymbol{B} = \{16,32,96\}$ :

- x = 4
  - All the elements in  $m{A}$  evenly divide  $m{x}=m{4}$ .
  - x = 4 evenly divides all the elements in B.

- x = 8:
  - All the elements in  $\boldsymbol{A}$  evenly divide  $\boldsymbol{x}=8$ .
  - x = 8 evenly divides all the elements in B.
- x = 16:
  - All the elements in  $\boldsymbol{A}$  evenly divide  $\boldsymbol{x}=16$ .
  - x = 16 evenly divides all the elements in B.

Thus, we print 3 as our answer.

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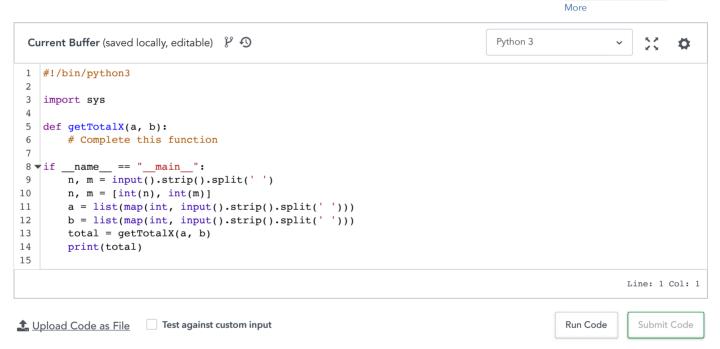
Submissions:53693

Max Score:10

Difficulty: Easy

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