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Test Name:	**Mock Test**
Taken On:	4 Jun 2023 13:51:40 IST
Time Taken:	7 min 25 sec/ 30 min
Invited by:	Ankush
Invited on:	4 Jun 2023 13:51:29 IST
Skills Score:	
Tags Score:	Algorithms 105/105 Core CS 105/105 Data Structures 105/105 Easy 105/105 LCM 105/105 Least Common Multiple 105/105 Math 105/105 gcd 105/105 greatest common divisor 105/105 problem-solving 105/105 sets 105/105

100%

105/105

scored in **Mock Test** in 7 min 25 sec on 4 Jun 2023 13:51:40 IST

Recruiter/Team Comments:

No Comments.

Question Description	Time Taken	Score	Status
Q1 **Between Two Sets** > **Coding**	7 min 9 sec	105/ 105	✓

QUESTION 1

Correct Answer

Score 105

Between Two Sets > Coding

Math | Algorithms | Easy | gcd | Data Structures | LCM | sets | problem-solving | Core CS | greatest common divisor | Least Common Multiple

QUESTION DESCRIPTION

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 betwen 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.

CANDIDATE ANSWER

Language used: **Python 3**

```
1
2
3
4  def compute_lcm(x, y):
5      return (x * y) // math.gcd(x, y)
6
7  #
8  # Complete the 'getTotalX' function below.
9  #
10 # The function is expected to return an INTEGER.
```

```python
# The function accepts following parameters:
#  1. INTEGER_ARRAY a
#  2. INTEGER_ARRAY b
#

def getTotalX(a, b):
    # Write your code here
    smallest_factor_a = a[0]
    possible_factors = []
    count = 0

    for num in a:
        smallest_factor_a = compute_lcm(num, smallest_factor_a)

    factor = smallest_factor_a

    while factor <= min(b):
        possible_factors.append(factor)
        factor += smallest_factor_a

    for factor in possible_factors:
        is_valid_factor = True

        for num in b:
            if num % factor:
                is_valid_factor = False
                break

        if is_valid_factor:
            count += 1

    return count

```

TESTCASE	DIFFICULTY	TYPE	STATUS	SCORE	TIME TAKEN	MEMORY USED
Testcase 1	Easy	Sample case	Success	0	0.0579 sec	10.7 KB
Testcase 2	Easy	Hidden case	Success	15	0.1036 sec	10.6 KB
Testcase 3	Easy	Hidden case	Success	15	0.0777 sec	10.6 KB
Testcase 4	Easy	Hidden case	Success	15	0.0896 sec	10.5 KB
Testcase 5	Easy	Hidden case	Success	15	0.0468 sec	10.6 KB
Testcase 6	Easy	Hidden case	Success	15	0.0425 sec	10.5 KB
Testcase 7	Easy	Hidden case	Success	15	0.0605 sec	10.8 KB
Testcase 8	Easy	Hidden case	Success	15	0.0426 sec	10.7 KB
Testcase 9	Easy	Sample case	Success	0	0.0569 sec	10.7 KB

No Comments