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Apple and Orange ☆

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Sam's house has an apple tree and an orange tree that yield an abundance of fruit. In the diagram below, the red region denotes his house, where s is the start point, and t is the endpoint. The apple tree is to the left of his house, and the orange tree is to its right. You can assume the trees are located on a single point, where the apple tree is at point a, and the orange tree is at point b.
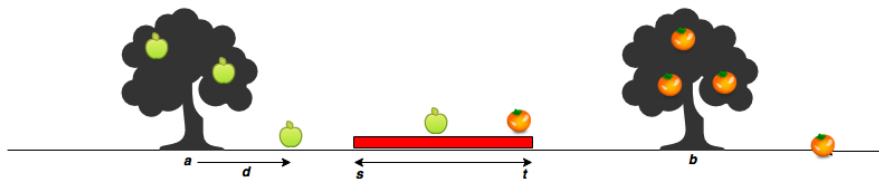
When a fruit falls from its tree, it lands d units of distance from its tree of origin along the x-axis. A negative value of d means the fruit fell d units to the tree's left, and a positive value of d means it falls d units to the tree's right.

Given the value of d for m apples and n oranges, determine how many apples and oranges will fall on Sam's house (i.e., in the inclusive range $[s, t]$)?

For example, Sam's house is between $s = 7$ and $t = 10$. The apple tree is located at $a = 4$ and the orange at $b = 12$. There are $m = 3$ apples and $n = 3$ oranges. Apples are thrown $apples = [2, 3, -4]$ units distance from a, and $oranges = [3, -2, -4]$ units distance. Adding each apple distance to the position of the tree, they land at $[4 + 2, 4 + 3, 4 + -4] = [6, 7, 0]$. Oranges land at $[12 + 3, 12 + -2, 12 + -4] = [15, 10, 8]$. One apple and two oranges land in the inclusive range $7 - 10$ so we print

```
1
2
```

Function Description

Complete the countApplesAndOranges function in the editor below. It should print the number of apples and oranges that land on Sam's house, each on a separate line.

countApplesAndOranges has the following parameter(s):

- s: integer, starting point of Sam's house location.
- t: integer, ending location of Sam's house location.
- a: integer, location of the Apple tree.
- b: integer, location of the Orange tree.
- apples: integer array, distances at which each apple falls from the tree.
- oranges: integer array, distances at which each orange falls from the tree.

Input Format

The first line contains two space-separated integers denoting the respective values of s and t.
The second line contains two space-separated integers denoting the respective values of a and b.
The third line contains two space-separated integers denoting the respective values of m and n.
The fourth line contains m space-separated integers denoting the respective distances that each apple falls from point a.
The fifth line contains n space-separated integers denoting the respective distances that each orange falls from point b.

Constraints

- $1 \le s, t, a, b, m, n \le 10^5$
- $-10^5 \le d \le 10^5$
- $a < s < t < b$

Output Format

Print two integers on two different lines:

1. The first integer: the number of apples that fall on Sam's house.
2. The second integer: the number of oranges that fall on Sam's house.

Sample Input 0

```
7 11
```

Author   nabila_ahmed
Difficulty   Easy
Max Score   10
Submitted By   285805

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```
5 15
3 2
-2 2 1
5 -6
```

Sample Output 0

```
1
1
```

Explanation 0

The first apple falls at position $5 - 2 = 3$.

The second apple falls at position $5 + 2 = 7$.

The third apple falls at position $5 + 1 = 6$.

The first orange falls at position $15 + 5 = 20$.

The second orange falls at position $15 - 6 = 9$.

Only one fruit (the second apple) falls within the region between 7 and 11, so we print 1 as our first line of output.

Only the second orange falls within the region between 7 and 11, so we print 1 as our second line of output.

Change Theme   Java 8

```
1    import java.io.*;
2    import java.math.*;
3    import java.security.*;
4    import java.text.*;
5    import java.util.*;
6    import java.util.concurrent.*;
7    import java.util.regex.*;
8
9    public class Solution {
10
11       // Complete the countApplesAndOranges function below.
12       static void countApplesAndOranges(int s, int t, int a, int b, int[] apples, int[]
         oranges) {
13
14
15       }
16
17       private static final Scanner scanner = new Scanner(System.in);
18
19       public static void main(String[] args) {
20           String[] st = scanner.nextLine().split(" ");
21
22           int s = Integer.parseInt(st[0]);
```

Line: 1 Col: 1

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