



# Counting the Ways

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Problem

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Little Walter likes playing with his toy scales. He has  $N$  types of weights. The  $i^{\text{th}}$  weight type has weight  $a_i$ . There are infinitely many weights of each type.

Recently, Walter defined a function,  $F(X)$ , denoting the number of different ways to combine several weights so their total weight is equal to  $X$ . Ways are considered to be different if there is a type which has a different number of weights used in these two ways.

For example, if there are **3** types of weights with corresponding weights **1**, **1**, and **2**, then there are **4** ways to get a total weight of **2**:

1. Use **2** weights of type **1**.
2. Use **2** weights of type **2**.
3. Use **1** weight of type **1** and **1** weight of type **2**.
4. Use **1** weight of type **3**.

Given  $N$ ,  $L$ ,  $R$ , and  $a_1, a_2, \dots, a_N$ , can you find the value of  $F(L) + F(L+1) + \dots + F(R)$ ?

## Input Format

The first line contains a single integer,  $N$ , denoting the number of types of weights.

The second line contains  $N$  space-separated integers describing the values of  $a_1, a_2, \dots, a_N$ , respectively.

The third line contains two space-separated integers denoting the respective values of  $L$  and  $R$ .

## Constraints

- $1 \leq N \leq 10$
- $0 < a_i \leq 10^5$
- $a_1 \times a_2 \times \dots \times a_N \leq 10^5$
- $1 \leq L \leq R \leq 10^{17}$

**Note:** The time limit for C/C++ is **1** second, and for Java it's **2** seconds.

## Output Format

Print a single integer denoting the answer to the question. As this value can be very large, your answer must be modulo  $10^9 + 7$ .

## Sample Input

```
3
1 2 3
1 6
```

## Sample Output

```
22
```

**Explanation**

$$F(1) = 1$$

$$F(2) = 2$$

$$F(3) = 3$$

$$F(4) = 4$$

$$F(5) = 5$$

$$F(6) = 7$$

[f](#) [t](#) [in](#)Submissions: 239

Max Score: 100

Difficulty: Expert

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Current Buffer (saved locally, editable)  

Java 7  

```
1 import java.io.*;
2 import java.util.*;
3 import java.text.*;
4 import java.math.*;
5 import java.util.regex.*;
6
7 public class Solution {
8
9     public static void main(String[] args) {
10         /* Enter your code here. Read input from STDIN. Print output to STDOUT. Your class should be named Solution. */
11     }
12 }
13
```

Line: 1 Col: 1

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