



All Contests > NOI-2023 > Moving balls

Moving balls

Problem

Submissions

Leaderboard

Discussions

Amara has a collection of empty bags. And there are barrels of coloured balls in a friend's house. Amara need to get all of those coloured balls in to his house using the collection of empty bags.

You're given an array of integers k of length n .

From 1^{st} trip to n^{th} trip, In the i^{th} trip, Amara can only take k_i bags with him. After that, in the $(n+1)^{th}$ trip Amara can take k_1 bags, in the $(n+2)^{th}$ trip Amara can take k_2 bags and so on. When the array k finishes, it repeats from the start.

Each bag can carry maximum l balls. Balls in a single bag must be of the same colour. He has to bring back m colours of balls. j^{th} color has q_j balls.

What is the minimum number of trips t required to transport all of the coloured balls to his home? It is guaranteed that $t < 10^5$

Subtasks

- Subtask 1 - 20 pts
 - $k_i = 2$
 - $q_j = l$
- Subtask 2 - 40 pts
 - $k_i = 2$
- Subtask 3 - 25 pts
 - $t < n$
- Subtask 4 - 15 pts
 - No further constraints

Input Format

The first line contains two integers n and l

Second line contains n integers $k_1, k_2, k_3, \dots, k_n$

Third line contains an integer m

Forth line contains m integers q_1, q_2, \dots, q_m

Constraints

$$n < 10^5$$

$$m < 10^5$$

$$k_i < 10^3$$

$$l < 10^5$$

$$q < 10^5$$

Output Format

Single integer - minimum number of trips required to transport all of the coloured balls to his home

Sample Input 0

2 2
1 2
2
1 2

Sample Output 0

2

Explanation 0

In the first day amara can bring 1 bag, with the ball of the first color. In the second day amara can bring 2 bags, with a ball of second color in each bag. Or a single bag with 2 balls of the second color.

[f](#) [t](#) [in](#)




Submissions: 0

Max Score: 100

Difficulty: Easy


Rate This Challenge:

☆☆☆☆☆

-  Download problem statement
-  Download all test cases
-  Suggest Edits

[Collapse](#)

Admin Options

-  [Edit Challenge](#)
- [View Submissions](#)

C++14

```
1 #include <map>
2 #include <set>
3 #include <list>
4 #include <cmath>
5 #include <ctime>
6 #include <deque>
7 #include <queue>
8 #include <stack>
9 #include <string>
10 #include <bitset>
11 #include <cstdio>
12 #include <limits>
13 #include <vector>
14 #include <climits>
15 #include <cstring>
16 #include <cstdlib>
17 #include <fstream>
18 #include <numeric>
19 #include <sstream>
20 #include <iostream>
21 #include <algorithm>
22 #include <unordered_map>
23
24 using namespace std;
25 int main() {
26     /* Enter your code here. Read input from STDIN. Print output to STDOUT */
27     return 0;
28 }
```

Line: 1 Col: 1

 Upload Code as File

☐ Test against custom input

Run Code

Submit Code