# B. Large Array and Segments

time limit per test: 2 seconds
memory limit per test: 512 megabytes

There is an array $a$ consisting of $n$ **positive** integers, and a positive integer $k$. An array $b$ is created from array $a$ according to the following rules:

- $b$ contains $n \cdot k$ numbers;
- the first $n$ numbers of array $b$ are the same as the numbers of array $a$, that is, $b_i = a_i$ for $i \le n$;
- for any $i > n$, it holds that $b_i = b_{i-n}$.

For example, if $a = [2, 3, 1, 4]$ and $k = 3$, then $b = [2, 3, 1, 4, 2, 3, 1, 4, 2, 3, 1, 4]$.

Given a number $x$, it is required to count the number of such positions $l$ ($1 \le l \le n \cdot k$), for which there exists a position $r \ge l$, such that the sum of the elements of array $b$ on the segment $[l, r]$ is **at least** $x$ (in other words, $b_l + b_{l+1} + \cdots + b_r \ge x$).

## Input

Each test consists of several test cases. The first line contains one integer $t$ ($1 \le t \le 10^4$) — the number of test cases. The description of the test cases follows.

The first line of each test case contains three integers $n$, $k$, $x$ ($1 \le n, k \le 10^5$; $1 \le x \le 10^{18}$).

The second line of each test case contains $n$ integers $a_i$ ($1 \le a_i \le 10^8$).

Additional constraints on the input:

- the sum of $n$ across all test cases does not exceed $2 \cdot 10^5$;
- the sum of $k$ across all test cases does not exceed $2 \cdot 10^5$.

## Output

For each test case, output one integer — the number of suitable positions $l$ in the array $b$.

## Example

**input** Copy

```
7
5 3 10
3 4 2 1 5
15 97623 1300111
105 95 108 111 118 101 95 118 97 108 111 114 97 110 116
1 100000 1234567891011
1
1 1 1
1
1 1 1
2
2 1 2
1 1
2 1 5
2 1
```

**output** Copy

```
12
1452188
0
1
1
1
0
```

## Note

In the first test case, the array $b$ looks like this:

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→ Submit?

Language: GNU G++17 7.3.0

Choose file: Choose File No file chosen

Submit

→ Last submissions

| Submission | Time | Verdict |
|---|---|---|
| 313820692 | Apr/03/2025 19:33 | Wrong answer on test 1 |
| 313812093 | Apr/03/2025 19:13 | Wrong answer on test 1 |

→ Problem tags

binary search brute force greedy

No tag edit access

→ Contest materials

- Announcement

$[3, 4, 2, 1, 5, 3, 4, 2, 1, 5, 3, 4, 2, 1, 5]$

There are $12$ positions $l$ for which there exists a suitable position $r$. Here are some (not all) of them:

- $l = 1$, for which there is a position $r = 6$, the sum over the segment $[1, 6]$ equals $18$;
- $l = 2$, for which there is a position $r = 5$, the sum over the segment $[2, 5]$ equals $12$;
- $l = 6$, for which there is a position $r = 9$, the sum over the segment $[6, 9]$ equals $10$.