

Contest Duration: 2025-08-16(Sat) 22:00 (<http://www.timeanddate.com/worldclock/fixedtime.html?iso=20250816T2100&p1=248>) - 2025-08-16(Sat) 23:40 (<http://www.timeanddate.com/worldclock/fixedtime.html?iso=20250816T2240&p1=248>) (local time) (100 minutes)

[Back to Home \(/home\)](/home)

[🏠 Top \(/contests/abc419\)](/contests/abc419)

[📋 Tasks \(/contests/abc419/tasks\)](/contests/abc419/tasks)

[❓ Clarifications \(/contests/abc419/clarifications\)](/contests/abc419/clarifications)

[📊 Results ▼](#)

[🏆 Standings \(/contests/abc419/standings\)](/contests/abc419/standings)

[🏆 Virtual Standings \(/contests/abc419/standings/virtual\)](/contests/abc419/standings/virtual)

[📖 Editorial \(/contests/abc419/editorial\)](/contests/abc419/editorial)

[💬 Discuss \(https://codeforces.com/blog/entry/145581\)](https://codeforces.com/blog/entry/145581)



E - Subarray Sum Divisibility

[Editorial \(/contests/abc419/tasks/abc419_e/editorial\)](/contests/abc419/tasks/abc419_e/editorial)



Time Limit: 2 sec / Memory Limit: 1024 MiB

Score : 475 points

Problem Statement

You are given a length- N integer sequence $A = (A_1, A_2, \dots, A_N)$.

Your goal is to perform the following operation repeatedly so that for every length- L contiguous subarray of A , the sum is a multiple of M .

- Choose an integer i such that $1 \leq i \leq N$, and increase the value of A_i by 1.

Find the minimum possible number of operations before achieving the goal.

Constraints

- $1 \leq N, M \leq 500$
- $1 \leq L \leq N$
- $0 \leq A_i < M$
- All input values are integers.

Input

The input is given from Standard Input in the following format:

2026-01-02 (Fri)
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$$\begin{matrix} N & M & L \\ A_1 & A_2 & \dots & A_N \end{matrix}$$

Output

Output the answer.

Sample Input 1 Copy

```
4 5 3
4 2 1 3
```

Copy

Sample Output 1 Copy

```
4
```

Copy

By performing the operation once choosing $i = 2$, twice choosing $i = 3$, and once choosing $i = 4$, you get $A = (4, 3, 3, 4)$ with a total of four operations, where every length-3 contiguous subarray sums to a multiple of 5.

Sample Input 2 Copy

```
7 10 4
7 0 9 1 6 4 2
```

Copy

Sample Output 2 Copy

```
10
```

Copy

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[Rule \(/contests/abc419/rules\)](/contests/abc419/rules) [Glossary \(/contests/abc419/glossary\)](/contests/abc419/glossary)

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