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Chef and Round Run

 | Problem Code: CHEFRRUN

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Chef cooks nice receipes in the cafeteria of his company. The cafe contains N boxes with food enumerated from 1 to N and are placed in a circle in clocwise order (boxes 1 and N are adjacent). Each box has unlimited amount of food with a tastyness level of A_i . Chef invented a definition of a magic box!

- Chef picks a box i and stays in front of it.
- Now Chef eats food from box i and **skips** next A_i boxes.
- Now Chef is staying at some other (probably even the same!) box and repeats.
- Box i is a magic box if at some point of such game started from box i , Chef will find himself staying in front of it again.

When Chef came home, Chef's dog Tommy asked him about how many magic boxes were in the cafe? Help Chef to in finding that!

Input

The first line of the input contains an integer T denoting the number of test cases. The description of T test cases follows.

The first line of each test case contains a single integer N denoting the number of boxes.

The second line contains N space-separated integers A_1, A_2, \dots, A_N denoting the tastyness levels of each box.

Output

For each test case, output a single line containing number of magical boxes.

Constraints

- $1 \leq \text{sum of all } N \text{ over all the test cases in a single test file} \leq 10^6$

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- **Subtask #1 (30 points):** $1 \leq \text{sum of all } N \text{ over all the test cases} \leq 10^4$; $1 \leq N \leq 1000$
- **Subtask #2 (70 points):** $1 \leq \text{sum of all } N \text{ over all the test cases} \leq 10^6$; $1 \leq N \leq 10^5$

Example

Input :

```
3
4
1 1 1 1
4
3 0 0 0
4
0 0 0 2
```

Output :

```
4
1
2
```

Explanation

Example case 1.

Here are Chef's paths if he starting from each the box:

```
1->3->1
2->4->2
3->1->3
4->2->4
```


As you see, all 4 boxes are magical.

Example case 2.

Here are Chef's paths if he starts from each box appropriately:

```
1->1
2->3->4->1->1
3->4->1->1
4->1->1
```

AS you see, only box 1 is magical.

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Editorial:	http://discuss.codechef.com/problems/CHEFRRUN
Tags:	aug16 , berezin , graph , simple
Date Added:	8-04-2016
Time Limit:	1 secs
Source Limit:	50000 Bytes
Languages:	C, CPP14, JAVA, PYTH, PYTH 3.5, PYPY, CS2, PAS fpc, PAS gpc, RUBY, PHP, GO, NODEJS, HASK, SCALA, D, PERL, FORT, WSPC, ADA, CAML, ICK, BF, ASM, CLPS, PRLG, ICON, SCM qobi, PIKE, ST, NICE, LUA, BASH, NEM, LISP sbcl, LISP clisp, SCM guile, JS, ERL, TCL, PERL6, TEXT, SCM chicken, CLOJ, FS

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The time now is: 07:56:09 AM
Your IP: 169.54.6.221

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