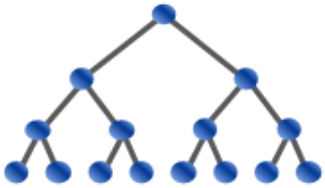

USACO 2023 February Contest, Gold
Problem 1. Equal Sum Subarrays

Return to Problem List

Contest has ended.

Log in to allow submissions in analysis mode

English (en)

****Note: The time limit for this problem is 3s, 1.5x the default.****

FJ gave Bessie an array a of length N ($2 \le N \le 500, -10^{15} \le a_i \le 10^{15}$) with all $\frac{N(N+1)}{2}$ contiguous subarray sums distinct. For each index $i \in [1, N]$, help Bessie compute the minimum amount it suffices to change a_i by so that there are two different contiguous subarrays of a with equal sum.

INPUT FORMAT (input arrives from the terminal / stdin):

The first line contains N.

The next line contains $a_1, \ldots, a_N$ (the elements of a, in order).

OUTPUT FORMAT (print output to the terminal / stdout):

One line for each index $i \in [1, N]$.

SAMPLE INPUT:

```
2
2 -3
```

SAMPLE OUTPUT:

```
2
3
```

Decreasing a_1 by 2 would result in $a_1 + a_2 = a_2$. Similarly, increasing a_2 by 3 would result in $a_1 + a_2 = a_1$.

SAMPLE INPUT:

```
3
3 -10 4
```

SAMPLE OUTPUT:

```
1
6
1
```

Increasing a_1 or decreasing a_3 by 1 would result in $a_1 = a_3$. Increasing a_2 by 6 would result in $a_1 = a_1 + a_2 + a_3$.

SCORING:

- Input 3: $N \le 40$
- Input 4: $N \le 80$
- Inputs 5-7: $N \le 200$
- Inputs 8-16: No additional constraints.

Problem credits: Benjamin Qi

Contest has ended. No further submissions allowed.

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