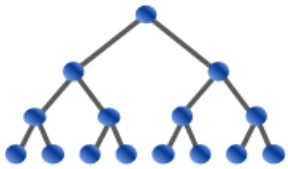

USACO 2024 January Contest, Silver
Problem 3. Cowlendar

Not submitted yet

English (en)

Bessie has woken up on a strange planet. In this planet, there are N ($1 \le N \le 10^4$) months, with $a_1, \ldots, a_N$ days, respectively ($1 \le a_i \le 4 \cdot 10^9$, all a_i are integers). In addition, on the planet, there are also weeks, where each week is L days, with L being a positive integer. Interestingly, Bessie knows the following:

- For the correct L, each month is at least 4 weeks long.
- For the correct L, there are at most 3 distinct values of $a_i \bmod L$.

Unfortunately, Bessie has forgotten what L is! Help her by printing the sum of all possible values of L.

Note that the large size of integers involved in this problem may require the use of 64-bit integer data types (e.g., a "long long" in C/C++).

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

The first line contains a single integer N. The second line contains N space-separated integers, $a_1, \ldots, a_N$.

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

A single integer, the sum of all possible values of L.

SAMPLE INPUT:

```
12
31 28 31 30 31 30 31 31 30 31 30 31
```

SAMPLE OUTPUT:

```
28
```

The possible values of L are 1, 2, 3, 4, 5, 6, and 7. For example, $L = 7$ is valid because each month is at least length $4 \cdot 7 = 28$ days long, and each month is either 0, 2, or 3 mod 7.

SAMPLE INPUT:

```
4
31 35 28 29
```

SAMPLE OUTPUT:

```
23
```

The possible values of L are 1, 2, 3, 4, 6, and 7. For example, $L = 6$ is valid because each month is at least length $4 \cdot 6 = 24$ days long, and each month is either 1, 4, or 5 mod 6.

SCORING:

- Inputs 3-4: $1 \le a_i \le 10^6$
- Inputs 5-14: No additional constraints

Problem credits: Brandon Wang

Language: C

Source File: 选择文件 未选择任何文件

Submit Solution