C - AtCoder AAC Contest

Editorial (/contests/abc422/tasks/abc422_c/editorial)

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Time Limit: 2 sec / Memory Limit: 1024 MiB

Score : 300 points

Problem Statement

Takahashi has some letters. Each letter he has is A, B, or C. Initially, he has n_A letters A, n_B letters B, and n_C letters C.

He can hold one contest by using one letter A, one letter C, and additionally any one letter, for a total of three letters. Specifically, he can hold AAC by using two letters A and one letter C, ABC by using one letter each of A, B, and C, and ACC by using one letter A and two letters C.

He wants to hold as many contests as possible using the letters he currently has. Find the maximum number of contests he can hold.

T test cases are given, so report the answer for each of them.

Constraints

- $1 \leq T \leq 2 \times 10^5$
- For each test case,
  - $0 \leq n_A \leq 10^9$
  - $0 \leq n_B \leq 10^9$
  - $0 \leq n_C \leq 10^9$
- All input values are integers.

Input

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

$$
\begin{aligned}
&T \\
&\mathrm{testcase}_1 \\
&\mathrm{testcase}_2 \\
&\vdots \\
&\mathrm{testcase}_T
\end{aligned}
$$

$\mathrm{testcase}_i$ $(1 \leq i \leq T)$ represents the i-th test case and is given in the following format:

$$
n_A \quad n_B \quad n_C
$$

Output

Output over T lines. On the i-th line $(1 \leq i \leq T)$, output the answer to the i-th test case.

Sample Input 1 Copy

Copy

```
5
3 1 2
100 0 0
1000000 1000000 1000000
31 41 59
1000000000 10000 1
```

Sample Output 1 Copy

Copy

```
2
0
1000000
31
1
```

In the first test case, he can hold AAC once and ABC once, for a total of two contests.

Therefore, output 2 on the first line.

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