Distributing Hat (abc)

In the Berlandian school of witchcraft and wizardry, Wartshog, each year newcomer students are distributed between three houses: Andorgryff, Bufflehuff, and Clawenrave. The distribution is done by a hat, called the Distributing Hat. The students put on the hat one by one (in a certain fixed order), and the hat shouts out loud the name of the house to which the student will belong. This year, there are A, B, and C places in the three houses respectively, and the number of new students is $A + B + C$, so there will be exactly A new students in Andorgryff, B in Bufflehuff, and C in Clawenrave. The Distributing Hat follows one additional rule: **no two consecutive students will be put in the same house**.

Can you tell how many different ways exist for distributing the students between the houses? Since this number might be very big, you need to give the answer modulo $10^9 + 7$. Two distributions are considered different if at least one student is assigned to a different house.

Figure 1: The Distributing Hat.

☞ Among the attachments of this task you may find a template file `abc.*` with a sample incomplete implementation.

Input

The first line contains T, the number of test cases. Each of the following T lines contains three integer numbers A, B and C.

Output

For each test case, output a single number on a separate line, the number of different ways to distribute the students, modulo $10^9 + 7$.

✍ The *modulo* operation ($a \bmod m$) can be written in C/C++/Python as `(a % m)`. To avoid the *integer overflow* error, remember to reduce all partial results through the modulus, and not just the final result!
Notice that if $x < 10^9 + 7$, then $2x$ fits into a C/C++ `int` *and* Pascal `longint`.

Constraints

- $1 \leq T \leq 20$.
- $0 \leq A, B, C \leq 100\,000$.
- $A + B + C \geq 1$.

Scoring

Your program will be tested against several test cases grouped in subtasks. In order to obtain the score of a subtask, your program needs to correctly solve all of its test cases.

– **Subtask 1** (0 points) Examples.

– **Subtask 2** (6 points) $C = 0$.

– **Subtask 3** (9 points) $A + B + C \leq 10$.

– **Subtask 4** (19 points) $A, B, C \leq 100$.

– **Subtask 5** (23 points) $A, B, C \leq 2000$.

– **Subtask 6** (14 points) $C \leq 2$.

– **Subtask 7** (29 points) No additional limitations.

Examples

input	output

5
2 3 0
2 2 1
4 1 1
100 100 100
100000 100000 1
	1
	12
	0
	105481704
	600000

Explanation

In the **first sample case**, there is only one possible distribution: `BABAB` (here we write the initial letter of the chosen house for each student in order).

In the **second sample case**, the 12 possible ways are: `ABABC`, `ABACB`, `ABCAB`, `ABCBA`, `ACBAB`, `BABAC`, `BABCA`, `BACAB`, `BACBA`, `BCABA`, `CABAB`, `CBABA`.

In the **third sample case**, there will be at least two consecutive `A`-s in any distribution, so the hat has no way to distribute the students.