

7486 Apples, Cherries, and Mangos

You are the boss of ACM (Apples, Cherries, and Mangos), an upstanding company with a single goal of world domination.

ACM have provided lots of fruits for the last programming competition for minions in Helsinki. The leftovers should now be shipped to Singapore. There is, however, one constraint: In the case that one box of apples is infested with apple-eating insects and the next one in the line is also a box of apples, the insects might move on to the neighboring box and infect it as well. This constraint is applicable for boxes of cherries and boxes of mangos too.

In order to avoid this, ACM decides that the boxes of fruits are to be sent in such a way that two consecutive boxes contain different types of fruits. The statistics department of ACM wants to know how many ways there are to arrange the shipments of A boxes of apples, C boxes of cherries and M boxes of mangos under this constraint.

Please provide a computer program to compute this for various choices of A , C , and M . Two arrangements are different if there exists i such that the i -th box delivered in the two arrangements contain different types of fruits. Since the answer may be very big, output the answer *modulo* a prime number $10^9 + 7$.

Input

The input file contains several test cases, each of them as described below.

The input consists of a single line consisting of three single space separated integers A , C , and M , denoting the total number of boxes of apples, cherries, and mangos you need to ship to Singapore, respectively. All three integers will be between 1 and 200 000, respectively.

Output

For each case, output the number of different possible arrangements of delivery, *modulo* a prime number $10^9 + 7$ on a line by itself. If there is no such order, output '0'.

Explanation:

In the first example, the 6 possible ways are:

1. Apple, Cherry, Mango, Cherry.
2. Cherry, Apple, Cherry, Mango.
3. Cherry, Apple, Mango, Cherry.
4. Cherry, Mango, Apple, Cherry.
5. Cherry, Mango, Cherry, Apple.
6. Mango, Cherry, Apple, Cherry.

Sample Input

```
1 2 1
2 2 2
1 1 10
```

Sample Output

6
30
0