

[A. Cody's Jams](#)[B. Dance Around The Clock](#)**[C. Polynesiaglot](#)**[D. Password Security](#)[Contest Analysis](#)[Questions asked](#)

## Submissions

## Cody's Jams

10pt	Not attempted <b>353/478 users</b> correct (74%)
10pt	Not attempted <b>323/346 users</b> correct (93%)

## Dance Around The Clock

10pt	Not attempted <b>270/304 users</b> correct (89%)
15pt	Not attempted <b>98/246 users</b> correct (40%)

## Polynesiaglot

5pt	Not attempted <b>164/201 users</b> correct (82%)
10pt	Not attempted <b>126/152 users</b> correct (83%)
10pt	Not attempted <b>110/123 users</b> correct (89%)

## Password Security

10pt	Not attempted <b>140/173 users</b> correct (81%)
20pt	Not attempted <b>27/106 users</b> correct (25%)

## Top Scores

Stacy992	100
shhuang	100
xeina	100
Javanochka	100
sim3995	100
Leylaa	100
nnetogrof	100
WYOCMWYH	100
Devushka	100
KashinYana	100

**Problem C. Polynesiaglot**

This contest is open for practice. You can try every problem as many times as you like, though we won't keep track of which problems you solve. Read the [Quick-Start Guide](#) to get started.

Small input 1  
5 points

Solve C-small-1

Small input 2  
10 points

Solve C-small-2

Large input  
10 points

Solve C-large

**Problem**

Ursula is a big fan of constructing artificial languages. Today, she is starting to work on a language inspired by real Polynesian languages. The only rules she has established are:

- All words consist of letters. Letters are either consonants or vowels.
- Any consonant in a word must be immediately followed by a vowel.

For example, in a language in which *a* is the only vowel and *h* is the only consonant, *a*, *aa*, *aha*, *aaha*, and *haha* are valid words, whereas *h*, *ahh*, *ahah*, and *ahha* are not. Note that the rule about consonants disallows ending a word in a consonant as well as following a consonant with another consonant.

If Ursula's new language has **C** different consonants and **V** different vowels available to use, then how many different valid words of length **L** are there in her language? Since the output can be a really big number, we only ask you to output the remainder of dividing the result by the prime  $10^9+7$  (1000000007).

**Solving this problem**

This problem has 2 Small inputs and 1 Large input. You must solve the first Small input before you can attempt the second Small input. You will be able to retry either of the Small inputs (with a time penalty). You will be able to make a single attempt at the Large, as usual, only after solving both Small inputs.

**Input**

The first line of the input gives the number of test cases, **T**. **T** test cases follow. Each consists of one line with three integers **C**, **V**, and **L**.

**Output**

For each test case, output one line containing Case #x: y, where x is the test case number (starting from 1) and y is the number of different valid words of length **L** in the language, modulo the prime  $10^9+7$  (1000000007).

**Limits****Small dataset 1**

**T** = 15.  
**C** = 1.  
**V** = 1.  
 $1 \leq L \leq 15$ .

**Small dataset 2**

$1 \leq T \leq 100$ .  
 $1 \leq C \leq 50$ .  
 $1 \leq V \leq 50$ .  
 $1 \leq L \leq 15$ .

**Large dataset**

$1 \leq T \leq 100$ .  
 $1 \leq C \leq 50$ .  
 $1 \leq V \leq 50$ .  
 $1 \leq L \leq 500$ .

**Sample**

Input	Output
2	Case #1: 5
1 1 4	Case #2: 6
1 2 2	

In Case #1, suppose that the only vowel is *a* and the only consonant is *h*. Then the possible valid words of length 4 are: *aaaa*, *aaha*, *ahaa*, *haaa*, *haha*.

In Case #2 (which would not appear in the Small dataset 1), suppose that the two vowels are *a* and *e* and the only consonant is *h*. Then the possible valid words of length 2 are: *aa*, *ae*, *ea*, *ee*, *ha*, *he*.

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