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 ≤ **L** ≤ 15.

Small dataset 2

1 ≤ **T** ≤ 100.
1 ≤ **C** ≤ 50.
1 ≤ **V** ≤ 50.
1 ≤ **L** ≤ 15.

Large dataset

1 ≤ **T** ≤ 100.
1 ≤ **C** ≤ 50.
1 ≤ **V** ≤ 50.
1 ≤ **L** ≤ 500.

Sample

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

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*.
