DUDE DECIDES TO GO ON A TRIP

Our SVNIT's dude, after his great experiences in Chennai, decided to go on a world trip now for the betterment of humanity. So as to make the journey interesting, he wanted to arrange the trips in **increasing order** of enjoyment . As in, the second journey should be more interesting than the first and third should be more interesting than second and so on.

But, in case they are not in increasing order , he has to request his friends to come to those locations , so as to increase the enjoyment. Every time Dude calls his friends, it increases the enjoyment of that location only by a certain number. He can call his friends any number of times at any location till enjoyment becomes in increasing order. As Dude is now busy packing, help him find the number of times he might have to call his friends .

Input:

The first line of the input contains two integer numbers n and d ($2 \leq n \leq 2000$, $1 \leq d \leq 106$), where n is the number of locations Dude decides to go to, and d is the enjoyment added each time Dude calls his friends .

The second line contains space separated sequence $b0, b1, ..., bn - 1$ ($1 \leq bi \leq 106$), which is enjoyment level of each location.

Output:

Output the minimal number of times Dude need to call his friends to make the sequence increasing.

Example:

INPUT:
4 2
1 3 3 2

OUTPUT:
3

From 1 to 3 , it is increasing. But, from 3 ->3 , it is not. So Dude calls his friend once and it becomes 5. Now 5->2 is not increasing, so he has to call his friends twice to make it increasing. Thus , answer is 3.

DUDE AND MYSTERIOUS LANDS

Upon visiting a new land far west, Dude came up to a region which had a unique problem of their own. The place had N distinct persons living in it and each person can pair up with any other person or can even remain single so as to make the gods happy. A single person can make pair with at most one other person.

As they had to make new combinations of people being in pairs and single everyday, they had to count the ways in which N persons living in code world can make pairs or remain single. Dude, thinking the problem to be very easy, decides to pass it on to you to tell the number of ways in which N persons living in this place can make pairs or remain single.

Input :
First line contain number of test cases T. Then next T lines contain a single integer N , denoting the number of persons living in that place.

Output:
You need to print the number of ways in which N different persons can make their pairs or stay single. As answer can be large so print it modulo 10^9+7.

Constraints :
1 <= T <=10^5
1 <= N <=10^6

Input:
2
2
3
Output:
2
4

Explanation
In first test case , For N=2 answer will be 2. Possible ways are : {1},{2} (It means Person 1 and Person 2 are single) {1,2} (It means Person 1 and Person 2 had formed a pair)

For second test case , For N=3 , answer will be 4. Possible ways are : {1},{2},{3} (It means all three Persons are single) {1,2},{3} (It means Person 1 and Person 2 had formed a pair and Person 3 is single) {1},{2,3} (It means Person 2 and Person 3 had formed a pair and Person 1 is single) {1,3},{2} (It means Person 1 and Person 3 had formed a pair and Person 2 is single)

DUDE AND HIS TEST

Dude arrives at a new place where entry is barred for all people except mathematicians. Dude gets the following problem to get in:

Given a sequence a1, a2, ..., aN. Count the number of triples (i, j, k) such that $1 \leq i < j < k \leq N$ and GCD(a[i], a[j], a[k]) = 1. Here GCD stands for the Greatest Common Divisor.

INPUT:
Input:
4
1 2 3 4

Output:
4

Constraints:
$1 \leq N \leq 10^5$:
$1 \leq ai \leq 10^6$

Explanation:
Any triple will be a coprime one.

DUDE AND THE LOCATIONS

Dude, on his journey, comes across many different locations and now in each location comes sub-location. He now wants to visit the sub-locations in sorted lexicographically and the number in front of them indicates the number of times they occurred in the input. Help him find this.

Input

The first line of input contains the number of strings n
the next n lines each contains a string of length 100 max and consists of only lower case alphabets.
1 <= n <= 500

7
cse
mnc
cse
ele
cse
zzza
physics

Output

cse 3
ele 1
mnc 1
physics 1
zzza 1

DUDE AND ALGORITHMS

Dude, in this new location, found a new technology of chatting with people without seeing them actually(Facebook :-P). But after chatting for 2 hours, he realised that it was actually a strong man, not the beautiful woman as in the pic. Disappointed , he decided to chat or not with person depending on the username. If the number of distinct characters in one's user name is odd, then he is a male, otherwise she is a female. You are given the string that denotes the user name, please help our DUDE to determine the gender of this user by his method.

Input
The first line contains a non-empty string, that contains only lowercase English letters — the user name. This string contains at most 100 letters.

Output
If it is a female by our dude's method, print "CHAT WITH HER!" (without the quotes), otherwise, print "IGNORE HIM!" (without the quotes).

input
wjmzbmr
output
CHAT WITH HER!

For the first example. There are 6 distinct characters in "wjmzbmr". These characters are: "w", "j", "m", "z", "b", "r". So wjmzbmr is a female and you should print "CHAT WITH HER!".