Monkey and the Oiled Bamboo

It's time to remember the disastrous moment of the old school math. Yes, the little math problem with the monkey climbing on an oiled bamboo. It goes like:

"A monkey is trying to reach the top of an oiled bamboo. When he climbs up 33 feet, he slips down 22 feet. Climbing up 33 feet takes 33 seconds. Slipping down 22 feet takes 11 second. If the pole is 1212 feet tall, how much time does the monkey need to reach the top?"

When I was given the problem, I took it seriously. But after a while I was thinking of killing the monkey instead of doing the horrible math! I had rather different plans (!) for the man who oiled the bamboo.

Now we, the problem-setters, got a similar oiled bam-boo. So, we thought we could do better than the traditional monkey. So, I tried first. I jumped and climbed up 3.53.5 feet (better than the monkey! Huh!) But in the very next second I just slipped and fell off to the ground. I couldn't remember anything after that, when I woke up, I found myself in a bed and the anxious faces of the problem set-ters around me. So, like old school times, the monkey won with the oiled bamboo.

So, I made another plan (somehow I want to beat the monkey), I took a ladder instead of the bamboo. Initially I am on the ground. In each jump I can jump from the current rung (or the ground) to the next rung only (can't skip rungs). Initially I set my strength factor k*k*. The meaning of k*k* is, in any jump I can't jump more than k*k* feet. And if I jump exactly k feet in a jump, k*k* is decremented by 11. But if I jump less than k*k* feet, k*k* remains same.

For example, let the height of the rungs from the ground
are 11, 66, 77, 1111, 1313 respectively and k*k* be 55. Now the steps are:

1. Jumped 11 foot from the ground to the 1st1*st* rung (ground to 11). Since I jumped less than k*k* feet, k*k* remains 55.
2. Jumped 55 feet for the next rung (11 to 66). So, k*k* becomes 44.
3. Jumped 11 foot for the 3rd3*rd* rung (66 to 77). So, k*k* remains 44.
4. Jumped 44 feet for the 4th4*th* rung (77 to 1111). This k*k* becomes 33.
5. Jumped 22 feet for the 5th5*th* rung (1111 to 1313). And so, k*k* remains 33.

Now you are given the heights of the rungs of the ladder from the ground, you have to find the minimum strength factor k*k*, such that I can reach the top rung.

Input Format

Input starts with an integer T*T* (≤500)(≤500), denoting the number of test cases.

Each case starts with a line containing an integer n denoting the number of rungs in the ladder. The next line contains n*n* space separated integers, r1,r2,...,rn*r*1,*r*2,...,*rn* (1≤r1<r2<...<rn≤1071≤*r*1<*r*2<...<*rn*≤107) denoting the heights of the rungs from the ground. For all cases, 1≤n≤101≤*n*≤10, except 55 cases where 10<n≤10510<*n*≤105.

Output Format

For each case, print the case number and the minimum value of k*k* as described above.

Sample test

inputcopy
2 5 1 6 7 11 13 4 3 9 10 14
outputcopy
Case 1: 5 Case 2: 6