Problem F- Paperboy

A paperboy wants you to help him optimize his delivery route, which is on one side of a [very] long, linear street. He spends time delivering papers, and time moving between houses. The time to deliver a paper is 1.

The time to move between a pair of houses equals the difference in the house numbers multiplied by the number of papers he carries plus 1. ***The paperboy must carry all the papers required to complete his route: leaving papers behind (for pickup at a later time) is not an option for him.***

The papers are dropped off in front of house number x. What's the smallest amount of time it will take him to deliver the papers?

Input Specification:

You will be presented with several test cases composed only of positive integers, one test case per line. Each line will begin with the number $n < 50$, the number of houses, followed by $n+1$ house numbers. The first n of these are where the paperboy delivers his papers, the last house number is where all n papers are dropped off. (This is the house where he starts his paper route.) House numbers never exceed 100000.

The input ends on EOF.

Output Specification:

For each test case, output the minimum amount of time it takes for the paperboy to finish his route.

Sample Input:

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3 10 20 30 10
4 10 20 40 80 35
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Sample Output:

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53
279
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