Picking Strawberry

To celebrate the homecoming of the returning upper-classmen, Case Western Reserve University decides to open a strawberry farm for the students to pick. Knowing about this event, Bob join the strawberry-picking event for free fruits.

The strawberries are ordered from left to right on a farm lane. Each strawberry has a sweetness level as a_i. After doing research on strawberry farming and cultivation, Bob has come to an observation that when he picked a strawberry, the "goodness" of that strawberry is the sum of the sweetness of the two neighboring strawberries (if exists) and itself. After picking the strawberry, the strawberry is removed from the farm lane, and the "goodness" of the neighboring strawberries changes. Knowing this, Bob would like to cultivate strawberries with the highest total "goodness". Could you help Bob with the power of computing?

Input

The first line consists of an integer n ($0 \leq n \leq 200$) denoting the number of strawberries on the farm lane. The next line consists of n integers a_i ($0 \leq a_i \leq 10^6$) denoting the sweetness of each strawberry.

Output

One integer denoting the highest total "goodness" of the picked strawberries.

Sample Input

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4
1 2 3 4
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Sample Output

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25
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