

Mark is an undergraduate student and he is interested in rotation. A conveyor belt competition is going on in the town which Mark wants to win. In the competition, there's A conveyor belt which can be represented as a strip of $1 \times N$ blocks. Each block has a number written on it. The belt keeps rotating in such a way that after each rotation, each block is shifted to left of it and the first block goes to last position.

There is a switch near the conveyer belt which can stop the belt. Each participant would be given a single chance to stop the belt and his *PMEAN* would be calculated.

PMEAN is calculated using the sequence which is there on the belt when it stops. The participant having highest *PMEAN* is the winner. There can be multiple winners.

Mark wants to be among the winners. What *PMEAN* he should try to get which guarantees him to be the winner.

$$PMEAN = \sum_{i=1}^n i \times a[i]$$

where a represents the configuration of conveyor belt when it is stopped. Indexing starts from 1.

Input Format

First line contains N denoting the number of elements on the belt.

Second line contains N space separated integers.

Output Format

Output the required *PMEAN*

Constraints

$$1 \leq N \leq 10^6$$

$$-10^9 \leq \text{each number} \leq 10^9$$

For any rotation, *PMEAN* will always lie within the range of 64-bit signed integer.

Sample Input

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3
20 30 10
```

Sample Output

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140
```

Explanation

Number on top can be written in these manners.

Initial numbers on belt, 20 30 10 $PMEAN = 1 \times 20 + 2 \times 30 + 3 \times 10 = 110$

After first rotation, 30 10 20 $PMEAN = 1 \times 30 + 2 \times 10 + 3 \times 20 = 110$

After second rotation, 10 20 30 $PMEAN = 1 \times 10 + 2 \times 20 + 3 \times 30 = 140$

So maximum possible value will be 140.