

Problem N. Treats for the Cows

Time limit	1000 ms
Mem limit	1572864 kB
Code length Limit	50000 B
OS	Linux

FJ has purchased N ($1 \leq N \leq 2000$) yummy treats for the cows who get money for giving vast amounts of milk. FJ sells one treat per day and wants to maximize the money he receives over a given period time. The treats are interesting for many reasons:

- The treats are numbered $1..N$ and stored sequentially in single file in a long box that is open at both ends. On any day, FJ can retrieve one treat from either end of his stash of treats.
- Like fine wines and delicious cheeses, the treats improve with age and command greater prices.
- The treats are not uniform: some are better and have higher intrinsic value. Treat i has value $v(i)$ ($1 \leq v(i) \leq 1000$).
- Cows pay more for treats that have aged longer: a cow will pay $v(i)*a$ for a treat of age a .

Given the values $v(i)$ of each of the treats lined up in order of the index i in their box, what is the greatest value FJ can receive for them if he orders their sale optimally?

The first treat is sold on day 1 and has age $a=1$. Each subsequent day increases the age by 1.

Input

Line 1: A single integer, N

Lines 2.. $N+1$: Line $i+1$ contains the value of treat $v(i)$

Output

The maximum revenue FJ can achieve by selling the treats

Example

Input:

```
5
1
3
1
5
```

2

Output:

43