Construct?!

Description

Give you P, a permutation of 1 to n. You must construct a new permutation P' by swapping two numbers of P such that $F(P) - F(P')$ is maximized.

$$
\begin{aligned}
F(P) &= \sum_{i=1}^{n} P_i - G(P,i), \text{ where} \\
G(P,i) &= \sum_{j=1}^{i} H(P_j \times e^{P_i}, P_i \times e^{P_j}), \text{ where} \\
H(a,b) &= \lceil \frac{\log_3(\lfloor \frac{a}{b} \rfloor + 1)}{n} \rceil
\end{aligned}
$$

Input

The file contains several test cases. Each test case begins with an integer n, followed by n integers that represent P.

- $2 \leq n \leq 100000$

Output

For each test case, print the maximum value of $F(P) - F(P')$ among all the possible P'.

Sample Input

```
5 5 4 3 2 1
5 1 3 2 4 5
```

Sample Output

```
7
1
```