The heaviest Subsequence

Write a program that, given a sequence S of n weights, calculates the heaviest subsequence of S containing no two adjacent entries.

Your program should work in time $O(n)$.

Input

The first line contains integer z ($1 \leqslant z \leqslant 2 \cdot 10^9$) – the number of data sets. Each data set is as follows:

The first line contains the number n ($1 \leqslant n \leqslant 10000$) denoting the size of the sequence S. The second line contains the weights w ($0 \leqslant w \leqslant 10000$) of n consecutive entries of the sequence, separated by a space.

Output

The weight of the heaviest subsequence of S containing no two adjacent entries of S.

Example

For the input:

```
4
4
2 1 1 2
6
4 3 2 3 4 0
5
2 1 2 4 1
9
4 2 2 4 2 2 4 2 2
```

the output is:

```
4
10
6
14
```