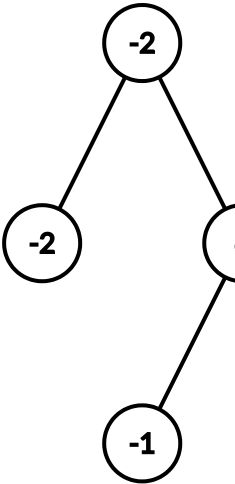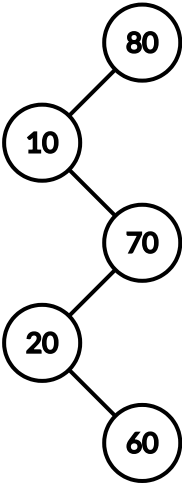**Statement**   **Submissions**   **Questions**

The second line will contain N numbers: $x_1, x_2, ..., x_N$.

Standard output

The first line will contain N numbers, corresponding to the depths of the added nodes.

Constraints and notes

- $1 \le N \le 2 \cdot 10^5$
- $-10^9 \le x_i \le 10^9$

Input	Output	Explanation
4 -2 -2 6 -1	1 2 2 3	

| 5
80 10 70 20 60 | 1 2 3 4 5 | |