Hello, **2024101067**.

Max sum path

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Points: 100 (partial)
Time limit: 1.0s
Memory limit: 256M

Allowed languages
C

You are given a binary tree with n nodes, where the root node is 1. The tree structure is described by two arrays:

- Parent Array (parent): An array of size n where parent[i] represents the parent of node i. For the root node, parent[0] is -1.
- Value Array (value): An array of size n where value[i] represents the value of node i.

Your task is to build the tree using the given parent array and calculate the maximum path sum from the root node (1) to any other node in the tree.

Input Format

- The first line contains an integer `t`, the number of testcases.
- The second line contains an integer `n`, the number of nodes in the tree.
- The third line contains n space-separated integers, where the i-th integer represents the parent of the i-th node. If the integer is -1, the i-th node is the root node.
- The fourth line contains the value array of size n.

Output Format

- For each test case, a single integer, the maximum path sum from the root node to any other node in the tree.

Constraints

- $1 \leq t \leq 20$
- $1 \leq n \leq 10^5$

Example

Input

```
2
5
-1 1 1 2 2
1 2 3 -1 4
4
-1 1 1 2
-10 -10 -10 -10
```

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Output

```
7
-10
```

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Clarifications

Request clarification

No clarifications have been made at this time.