The Way Forward
Problem ID: thewayforward

The Marshal of the Pact, Firstborn Trahearne, is trying to bring the fight to the fearsome Elder Dragon Mordremoth. The Elder Dragon is a formidable foe, wielding powerful ancient magic and commanding hordes of undead servants. The way to Mordremoth is treacherous, guarded by demonic strongholds of varying strength. The Pact forces must take over these strongholds before they can proceed. Trahearne has called on you, the Commander of the Pact, to act as his advisor and draft out a strategy for him.

Trahearne's explains that his forward scouts have recently come back with a report that indicates the estimated enemy strength at each stronghold. He talks tactics and strategy for a while before posing a task to you. He hands you the scouting report, and explains that to be successful in his quest, he must be prepared for the worst campaign possible. Trahearne describes a campaign as a series of strongholds where the enemy strength at each subsequent stronghold is strictly stronger than the previous stronghold.

Trahearne asks you to find the length of the longest campaign in the way forward, so that he may rally his troops and prepare the necessary resources for the battle ahead. He notes that there may be equally long campaigns, but he only cares about the length of the longest campaign.

Input

You will be given $1 \leq N \leq 5000$, followed by another line of N integer values. Each of these values represents a stronghold, and the enemy's strength at that given stronghold.

Output

Output the length of the longest campaign that Trahearne's army will have to endure to face Mordremoth.

Sample Input 1	Sample Output 1
6 1 2 5 4 3 6	3

Sample Input 2	Sample Output 2
11 1 2 3 0 1 4 5 6 1 7 9	5