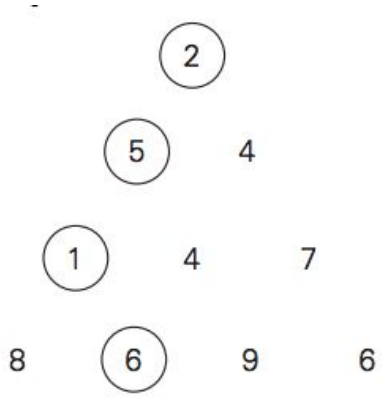
Minimum Sum Descent

Problem



Some positive integers are arranged in an equilateral triangle with n numbers in its base like the one shown in the figure for n = 4. The problem is to find the smallest sum in a descent from the triangle apex to its base through a sequence of adjacent numbers (shown in the figure by the circles).

Input

The first line of input gives the number of cases, T.
The first line of each case gives n, the number of elements in the base.
n lines follow with node values separated by spaces.

Output

For each test case, output one line containing Case #x: y, where x is the test case number and y is the length of the optimal path from the triangle's apex to base.

Limits

$1 \leq T \leq 100$

Small dataset
$1 \leq n \leq 100$

Large dataset
$1 \leq n \leq 1000000$

Sample

Input	Output
1 4 2 5 4 1 4 7 8 6 9 6	Case #1: 14