I: Stack Solitaire

Source file name: `stack.c`, `stack.cpp`, `stack.java`, *or* `stack.py`
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The International Casino for Programming Contestants (ICPC) has introduced a new game: the *Stack Solitaire*. At the start of the game, the player is given a stack of N coins, each having a, possibly different, positive integer value. As the game goes on, the number of stacks will increase.

At each turn, the player selects one stack from those having at least two coins and divides it into two smaller stacks, keeping the original order of the coins. The payoff obtained in each play is equal to the sum of the values of the coins in the split stack. The player's final payoff is obtained by adding up the payoffs from each play. The game ends when the player cannot split any stack, i.e., there are N stacks of one coin each.

For example, for the initial stack $\begin{bmatrix} 5 \\ 10 \\ 2 \\ 7 \end{bmatrix}$, there exist five possible sequences of plays. Two of them are

$$\begin{bmatrix} 5 \\ 10 \\ 2 \\ 7 \end{bmatrix} \longrightarrow \begin{bmatrix} 5 \end{bmatrix} \begin{bmatrix} 10 \\ 2 \\ 7 \end{bmatrix} \longrightarrow \begin{bmatrix} 5 \end{bmatrix} \begin{bmatrix} 10 \\ 2 \end{bmatrix} \begin{bmatrix} 7 \end{bmatrix} \longrightarrow \begin{bmatrix} 5 \end{bmatrix} \begin{bmatrix} 10 \end{bmatrix} \begin{bmatrix} 2 \end{bmatrix} \begin{bmatrix} 7 \end{bmatrix}$$

with a total payoff of $(5 + 10 + 2 + 7) + (10 + 2 + 7) + (10 + 2) = 55$; and,

$$\begin{bmatrix} 5 \\ 10 \\ 2 \\ 7 \end{bmatrix} \longrightarrow \begin{bmatrix} 5 \\ 10 \end{bmatrix} \begin{bmatrix} 2 \\ 7 \end{bmatrix} \longrightarrow \begin{bmatrix} 5 \end{bmatrix} \begin{bmatrix} 10 \end{bmatrix} \begin{bmatrix} 2 \\ 7 \end{bmatrix} \longrightarrow \begin{bmatrix} 5 \end{bmatrix} \begin{bmatrix} 10 \end{bmatrix} \begin{bmatrix} 2 \end{bmatrix} \begin{bmatrix} 7 \end{bmatrix}$$

with a total payoff of $(5 + 10 + 2 + 7) + (5 + 10) + (2 + 7) = 48$.

Given an initial stack, what is the minimum possible final score?

Input

The input consists of several test cases, each defined by two lines. The first line contains an integer N ($2 \leq N \leq 1\,000$), the number of coins in the initial stack. The second line contains N positive integers representing the values of the N coins in the stack, from bottom to top. Each coin value v is such that $1 \leq v \leq 100$.

The end of the input is indicated by a line with a single zero.

The input must be read from standard input.

Output

For each test case, output a line with the minimum possible final payoff for the given initial stack.

The output must be written to standard output.

Sample Input	**Sample Output**
4 7 2 10 5 3 2 10 7 0	48 31