Problem D
Don't Be So Negative!
Time limit: 4 seconds

Here's a simple problem: Consider the following expression:

$$1 - 2 - 3 - 4 - 5 - 6 - 7 - 8$$

The result here is pretty negative, so we want to insert zero or more pairs of parentheses into this expression to maximize it.

OK, maybe that's a little too simple. So we'll generalize it. Given a sequence of n integers $a_1, a_2, \ldots, a_n$, determine the maximum value of the expression $a_1 - a_2 - \cdots - a_n$ after adding zero or more pairs of parentheses. For example, the sequence above has a maximum value of 32 when it is parenthesized as

$$1 - (2 - 3 - 4 - 5 - 6 - 7 - 8).$$

Input

Input starts with a line containing an integer n ($1 \leq n \leq 1\,000$) indicating the number of values in the expression. The next line contains n integers $a_1\ a_2\ \ldots\ a_n$, where $-1\,000 \leq a_i \leq 1\,000$ for $1 \leq i \leq n$.

Output

Output the maximum value that can be obtained by inserting zero or more pairs of parentheses into the given expression.

Sample Input 1	Sample Output 1
8 1 2 3 4 5 6 7 8	32

Sample Input 2	Sample Output 2
8 1 -2 3 -4 5 -6 7 -8	36

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