

DIEULINH

Minh has n piles of pebbles. The i -th pile has $a[i]$ pebbles. The cost to merge 2 piles is the total of pebbles in this 2 piles. Calculate the cost to merge all these piles so that the cost is lowest.

Input

_ The first line is number N .

_ Next are n integers which is the number of pebbles in N piles.

Output

Result: write down the lowest cost

Example

Input:

5

4 1 2 7 5

Output:

41

$n < 1000$, $a[i] < 1000000000$

Note: sorry about my english ^^