Problem B. Sheep Transport Problem

Time limit 1000 ms
Mem limit 524288 kB

Description

Shepherd Bob is herding his N sheep (1 <= N <= 2,500) across the vast stretches of his farm when he encounters a river blocking his way. A single raft is available for transportation.

Bob knows that he must be on the raft for every crossing, and adding sheep to the raft slows down the crossing process.

When Bob is on the raft alone, it can cross the river in M minutes (1 <= M <= 1000). When the i sheep are added, it takes M_i minutes (1 <= M_i <= 1000) longer to cross the river than with i-1 sheep (i.e., total M+M_1 minutes with one sheep, M+M_1+M_2 with two, etc.). Determine the minimum time it takes for Bob to get all of the sheep across the river (including time returning to get more sheep).

Input

* Line 1: Two space-separated integers: N and M

* Lines 2...N+1: Line i+1 contains a single integer: M_i

Output

* Line 1: The minimum time it takes for Bob to get all of the sheep across the river

Sample 1

Input	Output
5 10 3 4 6 100 1	50

Hint

There are five sheep. It takes Shepherd Bob 10 minutes to cross the river by himself, 13 minutes if he brings one sheep, 17 minutes with two sheep, 23 minutes with three, 123 minutes with four, and 124 minutes with all five.

One possible approach for Bob is to first cross the river with three sheep (23 minutes), return alone (10 minutes), and then take the remaining two sheep across (17 minutes). This results in a total time of 23 + 10 + 17 = 50 minutes.