Water deposits P41867_en

There are n water deposits in a line. They are so huge that they can be considered to have infinite capacity. Initially, each deposit i has ℓ_i liters in it. You have a pump that you can use to transfer water from any deposit i to any adjacent deposit ($i-1$ or $i+1$). Each use of the pump to transfer water between two deposits has cost $p + \ell$, where p is a constant cost to connect two adjacent deposits, and ℓ is the number of liters transferred. Your goal is to minimize the cost to equally distribute the water among all the deposits.

Input

Input consists of several cases, each with n and p, followed by $\ell_1, \ldots, \ell_n$. You can assume $1 \leq n \leq 10^5$, $0 \leq p \leq 10^9$, $0 \leq \ell_i \leq 10^9$, and that the sum of all ℓ_i's is a multiple of n.

Output

For each case, print the minimum cost to equally distribute the water among all the deposits.

Sample input 1	Sample output 1
4 42 5 5 5 5	0
1 8 100	0
7 100 10 30 14 6 50 15 15	551
8 10 0 0 0 0 0 0 1000000000 1000000000	6000000070

Problem information

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