
Water deposits

P41867_en

Quinzè Concurs de Programació de la UPC - Semifinal (2017-06-29)

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 l_1, \dots, l_n . You can assume $1 \leq n \leq 10^5$, $0 \leq p \leq 10^9$, $0 \leq l_i \leq 10^9$, 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

```
4 42 5 5 5 5
1 8 100
7 100 10 30 14 6 50 15 15
8 10 0 0 0 0 0 0 1000000000 1000000000
```

Sample output

```
0
0
551
6000000070
```

Problem information

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