Problem C. Clamped Sequence

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	512 megabytes

Given an integer sequence $a_1, a_2, \ldots, a_n$ and a positive integer d, you need to clamp the sequence to a range $[l, r]$ satisfying $0 \le r - l \le d$ that maximize $\sum_{i=1}^{n-1} |a_i - a_{i+1}|$, where $|x|$ is the absolute value of x.

More specifically, clamping the sequence to the range $[l, r]$ makes each element

$$a_i := \begin{cases} l, & a_i < l; \\ a_i, & l \le a_i \le r; \\ r, & a_i > r. \end{cases}$$

Both l and r are arbitrary real numbers decided by you under the given constraints. It can be shown that the maximum sum is always an integer.

Input

The first line contains two integers n ($2 \le n \le 5\,000$) and d ($1 \le d \le 10^9$), denoting the length of the given sequence and the given parameter respectively.

The second line contains n integers $a_1, a_2, \ldots, a_n$ ($-10^9 \le a_i \le 10^9$), denoting the given sequence.

Output

Output a line containing a single integer, denoting the maximum sum.

Example

standard input	standard output
8 3 3 1 4 1 5 9 2 6	15

Note

In the sample case, you can clamp the given sequence to the range $[1, 4]$ to make it $[3, 1, 4, 1, 4, 4, 2, 4]$, and the resulting sum is the maximum 15.