

## Problem C. Clamped Sequence

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

Given an integer sequence  $a_1, a_2, \dots, a_n$  and a positive integer  $d$ , you need to clamp the sequence to a range  $[l, r]$  satisfying  $0 \leq r - l \leq d$  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

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

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  $n$  ( $2 \leq n \leq 5000$ ) and  $d$  ( $1 \leq d \leq 10^9$ ), denoting the length of the given sequence and the given parameter respectively.

The second line contains  $n$  integers  $a_1, a_2, \dots, a_n$  ( $-10^9 \leq a_i \leq 10^9$ ), 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.