Problem I. Improve Connectivity

Input file:	*standard input*
Output file:	*standard output*
Time limit:	2 seconds
Memory limit:	1024 mebibytes

In the beautiful city of UCPC, there are a total of n houses, arranged at equal intervals along a straight line. The inhabitants of house i request that the network connection speed at their house is at least a_i. The newly appointed mayor, Dohun, intends to install new antennas to ensure smooth network connectivity for the citizens.

When an antenna with strength x is installed, it provides a network connection speed of $x - \ell + 1$ to each of the ℓ consecutive houses. Here, the number of houses ℓ that receive the network connection can be set directly as an integer not exceeding x when installing the antenna, and it is also possible to set different values for each antenna. However, due to technical limitations, the maximum strength of a single antenna is P, and to prevent radio interference, antennas must be installed in such a way that no two antennas provide network to the same house.

To satisfy all citizens, Dohun wants to provide the required network connection speed at each house. Additionally, to save the city's budget, he aims to minimize the sum of the strengths of the installed antennas. Help Dohun find the minimum sum of antenna strengths required to provide the necessary network connection speeds at each house.

Input

The first line contains two integers, n and p: the number of houses in the city and the maximum strength of a single antenna ($1 \le n \le 5 \cdot 10^5$; $1 \le P \le 10^9$).

The second line contains n integers $a_1, a_2, \ldots, a_n$: the required network connection speed at each house ($1 \le a_i \le p$).

Output

Output the minimum sum of antenna strengths required to provide the necessary network connection speeds at all houses.

Example

standard input	*standard output*
7 5 2 4 3 3 1 4 5	19

Note

By installing:

- an antenna with strength 5 that provides a connection speed of 4 from house 1 to house 2,
- an antenna with strength 5 that provides a connection speed of 3 from house 3 to house 5,
- an antenna with strength 4 that provides a connection speed of 4 at house 6, and
- an antenna with strength 5 that provides a connection speed of 5 at house 7,

we can make the total sum of antenna strengths equal to 19, satisfying the requirements of all houses.