Minimize The Heights

Given an array **arr[]** denoting heights of **N** towers and a positive integer **K.**

For **each** tower, you must perform **exactly one** of the following operations **exactly once**.

- **Increase** the height of the tower by **K**
- **Decrease** the height of the tower by **K**

Find out the **minimum** possible difference between the height of the shortest and tallest towers after you have modified each tower.

You can find a slight modification of the problem here.
Note: It is **compulsory** to increase or decrease the height by K for each tower. **After** the operation, the resultant array should **not** contain any **negative integers**.

Examples :

```
Input: k = 2, arr[] = {1, 5, 8, 10}
Output: 5
Explanation: The array can be modified as {1+k, 5-k, 8-k, 10-k} = {3, 3, 6, 8}.The difference between the largest and the smallest is 8-3 = 5.
Input: k = 3, arr[] = {3, 9, 12, 16, 20}
Output: 11
Explanation: The array can be modified as {3+k, 9+k, 12-k, 16-k, 20-k} -> {6, 12, 9, 13, 17}.The difference between the largest and the smallest is 17-6 = 11.
```

Expected Time Complexity: O(n*logn)
Expected Auxiliary Space: O(n)

Constraints
$1 \leq k \leq 10^7$
$1 \leq n \leq 10^5$
$1 \leq arr[i] \leq 10^7$