# 360. Sort Transformed Array

# Description

Given a **sorted** integer array  $\begin{bmatrix} nums \end{bmatrix}$  and three integers  $\begin{bmatrix} a \end{bmatrix}$ ,  $\begin{bmatrix} b \end{bmatrix}$  and  $\begin{bmatrix} c \end{bmatrix}$ , apply a quadratic function of the form  $\begin{bmatrix} f(x) = ax^2 + bx + c \end{bmatrix}$  to each element  $\begin{bmatrix} nums[i] \end{bmatrix}$  in the array, and return the array in a sorted order.

## Example 1:

```
Input: nums = [-4,-2,2,4], a = 1, b = 3, c = 5
Output: [3,9,15,33]
```

### Example 2:

```
Input: nums = [-4,-2,2,4], a = -1, b = 3, c = 5
Output: [-23,-5,1,7]
```

#### **Constraints:**

- 1 <= nums.length <= 200
- -100 <= nums[i], a, b, c <= 100
- nums is sorted in ascending order.

Follow up: Could you solve it in 0(n) time?