

# 1675. Minimize Deviation in Array

## Description

You are given an array `nums` of `n` positive integers.

You can perform two types of operations on any element of the array any number of times:

- If the element is **even**, **divide** it by `2`.
  - For example, if the array is `[1,2,3,4]`, then you can do this operation on the last element, and the array will be `[1,2,3,2]`.
- If the element is **odd**, **multiply** it by `2`.
  - For example, if the array is `[1,2,3,4]`, then you can do this operation on the first element, and the array will be `[2,2,3,4]`.

The **deviation** of the array is the **maximum difference** between any two elements in the array.

Return *the minimum deviation the array can have after performing some number of operations.*

### Example 1:

**Input:** `nums = [1,2,3,4]`

**Output:** `1`

**Explanation:** You can transform the array to `[1,2,3,2]`, then to `[2,2,3,2]`, then the deviation will be  $3 - 2 = 1$ .

### Example 2:

**Input:** `nums = [4,1,5,20,3]`

**Output:** `3`

**Explanation:** You can transform the array after two operations to `[4,2,5,5,3]`, then the deviation will be  $5 - 2 = 3$ .

### Example 3:

**Input:** `nums = [2,10,8]`

**Output:** `3`

### Constraints:

- `n == nums.length`
- `2 <= n <= 5 * 104`
- `1 <= nums[i] <= 109`

