Problem 774: Minimize Max Distance to Gas Station

Problem Information

Difficulty: Hard
Acceptance Rate: 53.70%
Paid Only: Yes
Tags: Array, Binary Search

Problem Description

You are given an integer array `stations` that represents the positions of the gas stations on the **x-axis**. You are also given an integer `k`.

You should add `k` new gas stations. You can add the stations anywhere on the **x-axis** , and not necessarily on an integer position.

Let `penalty()` be the maximum distance between **adjacent** gas stations after adding the `k` new stations.

Return _the smallest possible value of_ `penalty()`. Answers within `10-6` of the actual answer will be accepted.

Example 1:

Input: stations = [1,2,3,4,5,6,7,8,9,10], k = 9 **Output:** 0.50000

Example 2:

Input: stations = [23,24,36,39,46,56,57,65,84,98], k = 1 **Output:** 14.00000

Constraints:

* `10 <= stations.length <= 2000` * `0 <= stations[i] <= 108` * `stations` is sorted in a **strictly increasing** order. * `1 <= k <= 106`

Code Snippets

C++:

```
class Solution {
public:
double minmaxGasDist(vector<int>& stations, int k) {

}
};
```

Java:

```
class Solution {
public double minmaxGasDist(int[] stations, int k) {

}
}
```

Python3:

```
class Solution:
def minmaxGasDist(self, stations: List[int], k: int) -> float:
```