786. K-th Smallest Prime Fraction

Description

You are given a sorted integer array `arr` containing `1` and **prime** numbers, where all the integers of `arr` are unique. You are also given an integer `k`.

For every `i` and `j` where `0 <= i < j < arr.length`, we consider the fraction `arr[i] / arr[j]`.

Return *the* `k th` *smallest fraction considered*. Return your answer as an array of integers of size `2`, where `answer[0] == arr[i]` and `answer[1] == arr[j]`.

Example 1:

```
Input: arr = [1,2,3,5], k = 3
Output: [2,5]
Explanation: The fractions to be considered in sorted order are:
1/5, 1/3, 2/5, 1/2, 3/5, and 2/3.
The third fraction is 2/5.
```

Example 2:

```
Input: arr = [1,7], k = 1
Output: [1,7]
```

Constraints:

- `2 <= arr.length <= 1000`
- `1 <= arr[i] <= 3 * 10 4`
- `arr[0] == 1`
- `arr[i]` is a **prime** number for `i > 0`.
- All the numbers of `arr` are **unique** and sorted in **strictly increasing** order.
- `1 <= k <= arr.length * (arr.length - 1) / 2`

Follow up: Can you solve the problem with better than `O(n 2)` complexity?