# Problem 1492: The kth Factor of n

## Problem Information

**Difficulty:** Medium
**Acceptance Rate:** 69.99%
**Paid Only:** No
**Tags:** Math, Number Theory

## Problem Description

You are given two positive integers `n` and `k`. A factor of an integer `n` is defined as an integer `i` where `n % i == 0`.

Consider a list of all factors of `n` sorted in **ascending order** , return _the_`kth` _factor_ in this list or return `-1` if `n` has less than `k` factors.

**Example 1:**

**Input:** n = 12, k = 3 **Output:** 3 **Explanation:** Factors list is [1, 2, 3, 4, 6, 12], the 3rd factor is 3.

**Example 2:**

**Input:** n = 7, k = 2 **Output:** 7 **Explanation:** Factors list is [1, 7], the 2nd factor is 7.

**Example 3:**

**Input:** n = 4, k = 4 **Output:** -1 **Explanation:** Factors list is [1, 2, 4], there is only 3 factors. We should return -1.

**Constraints:**

* `1 <= k <= n <= 1000`

**Follow up:**

Could you solve this problem in less than O(n) complexity?

## Code Snippets

**C++:**

```
class Solution {
public:
int kthFactor(int n, int k) {

}
};
```

**Java:**

```
class Solution {
public int kthFactor(int n, int k) {

}
}
```

**Python3:**

```
class Solution:
def kthFactor(self, n: int, k: int) -> int:
```