3116. Kth Smallest Amount With Single Denomination Combination

Description

You are given an integer array `coins` representing coins of different denominations and an integer `k`.

You have an infinite number of coins of each denomination. However, you are **not allowed** to combine coins of different denominations.

Return the `k`th **smallest** amount that can be made using these coins.

Example 1:

```
Input: coins = [3,6,9], k = 3
```

```
Output: 9
```

Explanation: The given coins can make the following amounts:
Coin 3 produces multiples of 3: 3, 6, 9, 12, 15, etc.
Coin 6 produces multiples of 6: 6, 12, 18, 24, etc.
Coin 9 produces multiples of 9: 9, 18, 27, 36, etc.
All of the coins combined produce: 3, 6, **9** , 12, 15, etc.

Example 2:

```
Input:  coins = [5,2], k = 7
```

```
Output:  12
```

Explanation: The given coins can make the following amounts:
Coin 5 produces multiples of 5: 5, 10, 15, 20, etc.
Coin 2 produces multiples of 2: 2, 4, 6, 8, 10, 12, etc.
All of the coins combined produce: 2, 4, 5, 6, 8, 10, **12** , 14, 15, etc.

Constraints:

- `1 <= coins.length <= 15`
- `1 <= coins[i] <= 25`
- `1 <= k <= 2 * 10`^{9}
- `coins` contains pairwise distinct integers.