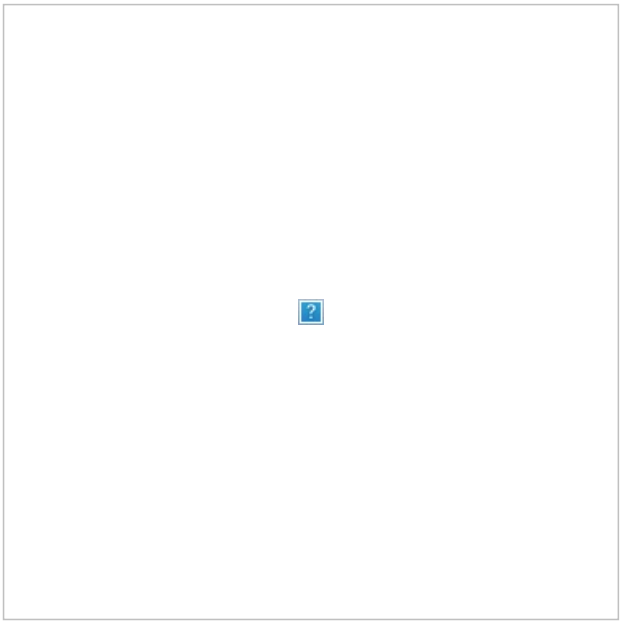
[PI031] - Power Ups



You're just one step away from facing the Final Boss in the toughest video game ever made: "Legend of the Stack Overflow".

You've gathered a collection of mystical potions during your quest. Each potion is unique and provides a specific boost to your power when consumed. But here's the twist — you only need just enough power (or more) to take on the boss.

Now you stand before your inventory, asking yourself:

"How many different combinations of potions will get me to the power level I need... or beyond?"

You're out of mana, low on health, but you've got brainpower — time to calculate!

Task

You are given:

- A list of `n` potions, each with a unique power value.
- A target power level `k` you must reach or surpass.

Determine how many different subsets of potions (you can drink any number, in any order, but each at most once) will give you at least `k` total power.

Input

The first line of input contains two integers separated by a space, an integer `n` (`1 <= n <= 20`) corresponding to the number of potions and an integer `k` (`1 <= k <= 1'000`) corresponding to the minimum power needed.

The second line of input contains `n` space-separated integers, representing the power values of the potions.

Output

Print one line with an integer, corresponding to the amount of ways you have to select the potions to reach the goal.

Print a single integer representing the number of distinct combinations of potions that yield a total power greater than or equal to `k`.

Example 1

Input

```
3 5
3 10 2
```

Output

```
5
```

Explanation

The ways to pick are the following:

- The first and the second potion, (`3 + 10 = 13`).
- The first, the second and the third potion, (`3 + 10 + 2 = 15`).
- The first and the third potion, (`3 + 2 = 5`).
- The second potion, (`10 = 10`).
- The second and the third potion, (`10 + 2 = 12`).

Example 2

Input

```
1 5
6
```

Output

```
1
```

Example 3

Input

```
2 5
6 10
```

Output

```
3
```
