@LeetCode

Alice plays the following game, loosely based on the card game "21".

Alice starts with `0` points, and draws numbers while she has less than `K` points. During each draw, she gains an integer number of points randomly from the range `[1, W]`, where `W` is an integer. Each draw is independent and the outcomes have equal probabilities.

Alice stops drawing numbers when she gets `K` or more points. What is the probability that she has `N` or less points?

Example 1:

```
Input: N = 10, K = 1, W = 10
Output: 1.00000
Explanation:  Alice gets a single card, then stops.
```

Example 2:

```
Input: N = 6, K = 1, W = 10
Output: 0.60000
Explanation:  Alice gets a single card, then stops.
In 6 out of W = 10 possibilities, she is at or below N = 6 points.
```

Example 3:

```
Input: N = 21, K = 17, W = 10
Output: 0.73278
```

Note:

1. `0 <= K <= N <= 10000`
2. `1 <= W <= 10000`
3. Answers will be accepted as correct if they are within `10^-5` of the correct answer.
4. The judging time limit has been reduced for this question.