Problem 1230: Toss Strange Coins

Problem Information

Difficulty: Medium
Acceptance Rate: 58.08%
Paid Only: Yes
Tags: Array, Math, Dynamic Programming, Probability and Statistics

Problem Description

You have some coins. The `i`-th coin has a probability `prob[i]` of facing heads when tossed.

Return the probability that the number of coins facing heads equals `target` if you toss every coin exactly once.

Example 1:

Input: prob = [0.4], target = 1 **Output:** 0.40000

Example 2:

Input: prob = [0.5,0.5,0.5,0.5,0.5], target = 0 **Output:** 0.03125

Constraints:

* `1 <= prob.length <= 1000` * `0 <= prob[i] <= 1` * `0 <= target ``<= prob.length` * Answers will be accepted as correct if they are within `10^-5` of the correct answer.

Code Snippets

C++:

```
class Solution {
public:
double probabilityOfHeads(vector<double>& prob, int target) {
```

```
}
};
```

Java:

```
class Solution {
public double probabilityOfHeads(double[] prob, int target) {

}
}
```

Python3:

```
class Solution:
def probabilityOfHeads(self, prob: List[float], target: int) -> float:
```