Game Show

Kyle Broflovski was just selected to compete on his favorite game show! Help him find his probability of winning the grand prize. The rules of the game are as follows:

- There are n *special numbers*; for each special number, contestants are given its cost, x, and its probability, p, of being one of the winning numbers. After buying a special number, the contestant will be told if the special number is one of the winning numbers.
- Each contestant has m dollars to buy special numbers.
- Each special number can only be purchased once.
- To win the grand prize, a contestant must guess c special numbers correctly.

Determine Kyle's probability (given that he always takes an optimal approach) of guessing c special numbers correctly and winning the grand prize.

Input Format

The first line contains 3 space-separated integers: n (total special numbers), c (number of correct guesses Kyle must make), and m (amount of money Kyle has), respectively.

Each of the n subsequent lines describes the properties of a special number. Each special number, n_i, is described in two space-separated integers, x (the number's price) and p (its probability of being a winning number out of 100), respectively.

Constraints

- $ 1 ≤ n,c ≤ 16 $
- $1 ≤ m ≤ 1000$
- $1 ≤ x ≤ 1000 $
- $1 ≤ p ≤ 100 $

Output Format

Print a single floating point number representing Kyle's probability of guessing c special numbers correctly (given that he takes an optimal approach). The number should be accurate up to 10^{-6} relative or absolute precision.

Sample Input 0

```
4 3 1000
300 40
300 50
300 60
300 70
```

Sample Output 0

```
0.21
```

Sample Input 1

```
4 2 1000
700 55
100 75
400 20
500 20
```

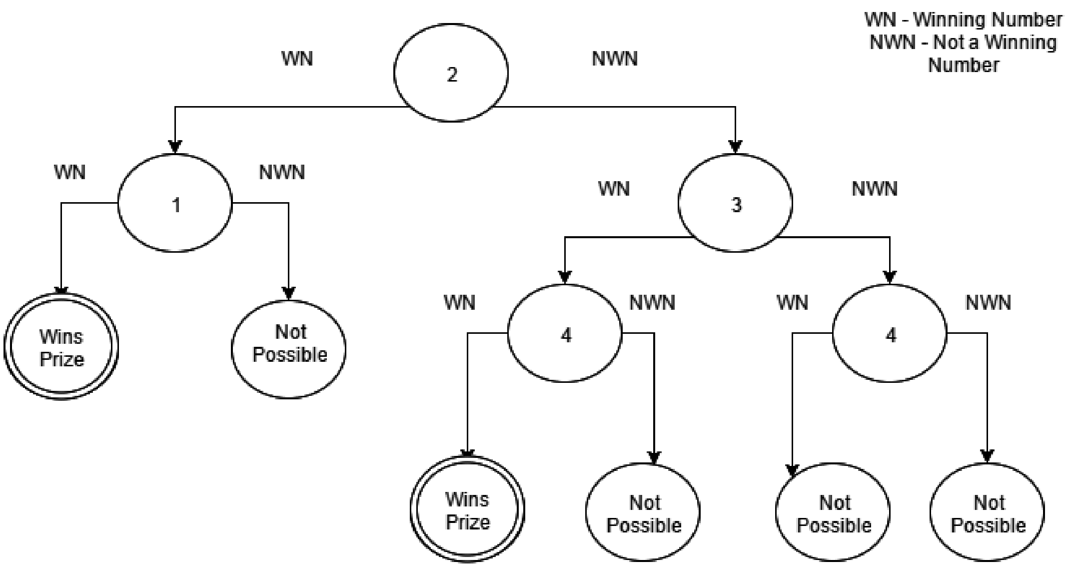
Sample Output 1

```
0.4225
```

Explanation

Sample Case 1:

The optimal approach taken by Kyle is demonstrated in the following diagram:



In this approach, Kyle buys the 2^{nd} special number, proceeds with the possible cases, and wins the grand prize upon reaching the *Wins Prize* state.

The total probability in this case is equal to the sum of the probabilities of the two winning paths:

$$0.75 \times 0.55 + (1-0.75) \times 0.20 \times 0.20 = 0.4225$$

We then print the result (0.4225) as our answer.