

## L Lucky Draw

Time limit: 2s

You and your friends at the Betting against All Probability Club are visiting a casino where the following game is played.

Each of the  $n$  players starts with  $k$  lives and puts in a fixed amount of money. In each round of the game, each player flips a biased coin and loses a life if she gets tails. The game ends when only one player remains, in which case this person wins, or ends in a draw if all remaining players lose their last life in the same round. If there is a winner, she wins  $n$  times her original bet. In case of a draw, no one wins anything.

Being a BAPC member you quickly realize the casino has an edge here: whenever the game ends in a draw all of the contestants lose the money they bet. You are now wondering what exactly is the probability that this game ends in a draw, so you can figure out how much the casino profits on average.



### Input

- One line containing two integers,  $2 \leq n \leq 50$ , the number of players,  $1 \leq k \leq 50$ , the number of lives each player has, and a floating point number  $0.1 \leq p \leq 0.9$ , the probability the coin lands heads.

### Output

- Output a single floating point number: the probability of the game ending in a draw. Your answer should have an absolute error of at most  $10^{-6}$ .

#### Sample Input 1

2 2 0.5

#### Sample Output 1

0.185185185

#### Sample Input 2

2 2 0.8

#### Sample Output 2

0.056241426

#### Sample Input 3

5 3 0.85

#### Sample Output 3

0.045463964