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	Sample Output 1
2 2 0.5	0.185185185

Sample Input 2	Sample Output 2
2 2 0.8	0.056241426

Sample Input 3	Sample Output 3
5 3 0.85	0.045463964