Problem Link:

<https://leetcode.com/problems/new-21-game/description/?envType=daily-question&envId=2025-08-17>

Solution:

class Solution {

public:

double new21Game(int n, int k, int maxPts) {

if(k == 0 || n >= k + maxPts)

return 1.0;

vector<double> dp(n + 1, 0.0);

dp[0] = 1.0;

double ws = 1.0;

double s = 0.0;

for(int i = 1; i <= n; ++i)

{

dp[i] = ws / maxPts;

if(i < k)

ws += dp[i];

else

s += dp[i];

if(i - maxPts >= 0)

ws -= dp[i - maxPts];

}

return s;

}

};