Sun Tzu

Sun Tzu does what he knows best, he fights a war. The famous strategist knows that there is no way he can win every battle, but he wants to maximize his odds of winning the war. Sun Tzu has s soldiers and the opposing general has s' soldiers. There are k battlefields. If a side sends more soldiers to a battlefield that side wins the battle. If one side wins more battles than the other, it wins the war.

Please note that the problem is posed this way for historic reasons. Currently it is more relevant for marketing, elections and strategic planning in economy.

Input: The input consists of number of soldiers on both sides s and s' and the number of battlefields k. Each number is given as an integer.

Output: The ratio v of wars won by Sun Tzu if he chooses the best deterministic strategy and faces a general that picks his strategy uniformly at random. Please return the result as a floating point number up to 3 digits of precision.

Sample Input 1:

2 1 2

Sample Output 1:

1

The strategy $(1,1)$ always wins one battlefield and ties on the other. Note that $(2,0)$ only achieves a draw in half the cases.

Sample Input 2:

6 6 3

Sample Output 2:

0.429