Problem G- Dark Dungeons

You're playing the latest game from Chick Productions: Dark Dungeons. Even the name is scary. But before you can play the game, you'll have to make a character; and to make a character, you'll have to roll some dice!

The first thing you do when making a Dark Dungeons (DD) character is roll your ability scores. An ability score comes from rolling three standard dice and adding up the result (we will call that a *roll*). That gives you a single ability score between 3 and 18. But the Darkness Master (DM) can decide how powerful she wants your character to be!

The DM has decided that you will roll N times, but you will not use all of your rolls: you will only use your rolls from the a^{th}-lowest to the b^{th}-lowest, inclusive. For example, if $N = 12$, $a = 7$ and $b = 12$, you will roll 12 times, and take the highest 6 rolls.

You think that your DM is causing you to create characters that are not powerful enough. Prove it to her! Given N, a and b, output (to five decimal places) the average roll that you will get.

Input Specification:

The first line of input will contain an integer $1 \leq T \leq 100$, the number of test cases. T test cases will follow. Each test case will be a single line consisting of three integers, separated by spaces: N, a and b. They will satisfy the constraint $1 \leq a \leq b \leq N \leq 500$.

Output Specification:

For each test case, output the average roll, correct to five decimal places, alone on a line. In this case, *average* means: if you generate $(b-a+1)$ integers in this way, they will have some mean. If you do this a large number of times, those means will have some average. That is the average you need to output.

Sample Input:

```
3
2 1 2
2 2 2
12 7 12
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Sample Output:

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10.50000
12.17631
12.74026
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