Random Number Generator

LoadingTime got a RNG (*Random Number Generator*) from his classmate several weeks ago. And he spent a lot of time study it. He found that RNG can generate a real number in range [-**S**,**S**] by executing following steps. First RNG generates n integer $\mathbf{X}_1..\mathbf{X}_n$, the sum of which is equal to **S**. Then for each $\mathbf{X}_i$, it generates a real number in range [$-\mathbf{X}_i$,$\mathbf{X}_i$] randomly. The output (a real number) of RNG will be the sum of the **N** generated real numbers. LoadingTime noticed that the distribution of the output was very interesting, and he wanted to know: for given **N** and **X**, what's the probability that the generated number is in range [**A**,**B**]. Could you help him?

Input

The first line contains an integer T representing the number of test cases.

For each test case, the first line contains three integers **N**, **A**, **B**($1 \le \mathbf{N} \le 10$, $-100 \le \mathbf{A} \le \mathbf{B} \le 100$) In the second line of the test case, you are given $\mathbf{X}_1...\mathbf{X}_n$($1 \le \mathbf{X}_i \le 10$).

Output

For each test case, print a line contains a real number representing the probablity as the problem required. It must be printed with exactly nine decimal places.

Example

Input:
5
1 -100 100
10
1 10 90
10
1 -20 5
10
2 -20 5
5 5
5 -5 10
1 2 3 4 5

Output:
1.000000000
0.000000000
0.750000000
0.875000000
0.864720052