

Old problem

Let G is the convex polygon with area S and perimeter L . We need to know volume of set of points which distance from G is not greater than R .

Input

Number of test cases in first line and three integers S , L and R for each test case. All integers in input are nonnegative and less than 100.

Output

Volume for each test case with 10^{-2} precision.

Example

Input:

1
48 57 1

Output:

189.724