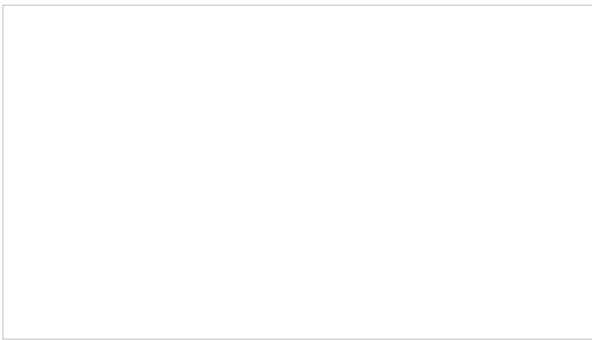


# THINK DIFFERENT

## Problem:

In the figure, angle BAC is a right angle. AD is the perpendicular to BC. P is the middle point of BC. ADMN is a square. You will be given two numbers representing the length of BD (L) and the area of ADMN (A). You have to find the length of AP.



## Input:

First line contain an integer T, ( $0 < T \leq 100000$ ) representing test case. Next T lines contain two positive numbers L and A ( $0 < L, A \leq 1.7E+308$ ) stated above.

## Output:

You have to print the length of AP with two digits after decimal point. The Format is given in the sample.

Input	Output
3	Case 1: 5.000000
5 25	Case 2: 5.000000
4 24	Case 3: 7.500000
7 56	