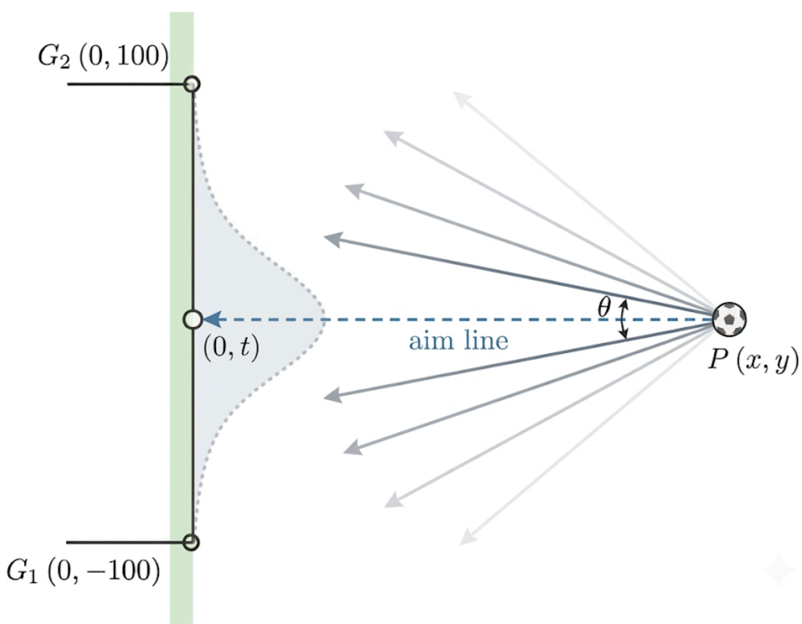
Problem G: Goal

Every four years the whole planet stops for the World Cup. Every country except this one. Thailand has never qualified, not once, so we do what we always do: coach a team that isn't even playing, from the sofa. And even "watching" is generous, because most matches sit behind a paywall. No subscription, no football.

But not this year. If the nation can neither reach the World Cup nor afford the subscription to watch it, you will at least master the free kick, armed with a striker, some coordinates, and the faith that geometry, unlike our national team, never chokes. Where should he aim?

The goal is the segment of the y-axis between the two posts G_1 = (0, -100) and G_2 = (0, 100). The striker takes the free kick from a point P = (x, y) with x > 0.

The striker chooses a spot (0, t) on the goal line and aims straight at it. Nobody is perfect, though: the ball leaves at an angle that differs from the intended aiming direction by a random error. This angular error is drawn from a Gaussian distribution with mean 0 and some fixed positive standard deviation. After leaving the boot, the ball travels in a straight line.



A goal is scored when the ball's path crosses the goal line strictly between the posts, that is, it crosses the y-axis at a point (0, s) with -100 < s < 100.

For each free kick, report the aiming spot (0, t) that gives the striker the greatest probability of scoring.

Input:

The first line contains an integer ***T***, the number of free kicks.

Each of the next ***T*** lines contains two integers ***x*** and ***y***, the striker's position ***P*** = (***x***, ***y***).

Output:

For each free kick, print on its own line the value ***t*** (the y-coordinate of the best aiming spot), with 4 digits after the decimal point.

Sample Input	Sample Output
4 100 0 100 50 50 -30 30 80	0.0000 23.4436 -23.6391 67.0030

Constraints:

- 1 ≤ ***T*** ≤ 1000
- 1 ≤ ***x*** ≤ 1,200
- -400 ≤ ***y*** ≤ 400