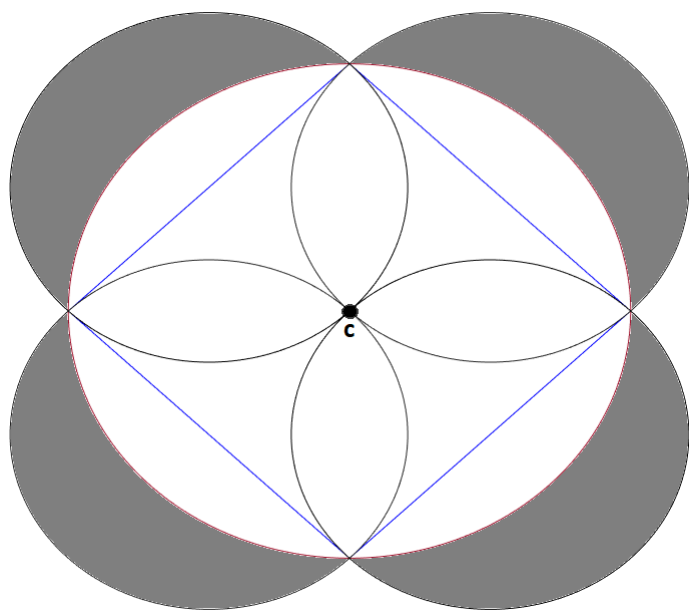

Problem A. Circles

Input file: `standard input`
Output file: `standard output`
Time limit: 1 second
Memory limit: 256 megabytes

Let d be the diameter of a circle with center $c = (a, b)$. A square has been drawn inside that circle such that its vertices lie at the circle's circumference. Four circles have been drawn on the square's sides such that the diameter of each circle is the side of the square, as shown in the figure below.



Your task is to calculate the shaded area in the figure for a given d . Can you?

Input

The first line contains an integer T ($1 \leq T \leq 10^5$), in which T is the number of test cases.
Each test case consists of a line containing an three integers a , b , and d ($-10^9 \leq a, b \leq 10^9$) ($1 \leq d \leq 10^9$), giving the center and the diameter of a circle.

Output

For each test case, print a single line containing shaded area.
Your answer will be considered correct if its absolute or relative error does not exceed 10^{-6} .

Example

standard input	standard output
1 2 3 8	32