

Problem E. Eating Pizza

Program: pizza.(cpp|java)
Input: pizza.in
Balloon Color: Green

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Youssef Alaoui isn't only good in organizing pool side dinners but also at making pizza, but since he is a very creative person, he doesn't like the conventional shape of pizza, and he prefers to make it in a triangular shape, rather than a circular one.

He wanted to serve pizza for the poolside dinner, and since the number of world finals attendees is huge, he needed to make big amounts of triangular-shaped pizzas, but he only has a circular tray, so he decided to make the maximum triangle shaped pizza that can be made using the circular tray. Given the area of the resulting maximum triangle, can you find out the area of the circle?

Input

The first line of the input contains an integer T ($1 \leq T \leq 10^6$), the number of test cases.

Each test case contains only one number A ($1 \leq A \leq 10^6$), the area of the resulting triangle.

Output

For each test case print a single number, the area of the circle with relative error up to $1e-6$.

Examples

pizza.in	Standard Output
3	2.418399
1	7.255197
3	65.296777
27	