



Problem N: Pseudocode

Time limit: 1s; Memory limit: 256 MB

In computer science, pseudocode is a plain language description of the steps in an algorithm or another system. Pseudocode often uses structural conventions of a normal programming language, but is intended for human reading rather than machine reading. It typically omits details that are essential for machine understanding of the algorithm, such as variable declarations and language-specific code.* Wikipedia

Today, Bob gets a follow pseudocode from Alice:

```
begin
  int N, i = 1
  float sum = 0.0
  Input N from user
  do
    sum = sum + 1.0 / i * (i + 1)
    i = i + 1
  while i <= N
  Display the value of (1 - sum) * 109
end.
```

Bob wants to implement a program from that pseudocode, but he is not enough time to do it. So, please help him!!

Input

The input starts with T ($1 \leq T \leq 10^3$) - the number of test cases.

Each test case is a natural number, N ($1 \leq N \leq 10^9$).

Output

For each test case, you should print the output of your program implemented from given pseudocode. The answer is accepted if the absolute error or relative error does not exceed 10^{-9} .



Sample

Input	Output
3	500000000.0
1	333333333.333
2	200000000.0
4	