Hasso Plattner Institut
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Sommersemester 2016

Woche 01 – Competitive Programming

Abgabe 26.04.2016 09:00 Uhr, über das Judge-Interface

Aufgabe 1 (haplesshedonism)**.** (100 Points)

Bob is a world-renowned stick collector. His most prized stick possessions include:

- an Arctic Redwood branch from a hike near Dawson City,
- a Desert Pine stick from a visit to the Grand Canyon, and
- a Chinese Arbour twig from an adventure into Tibet.

Bob collects sticks in a peculiar way. He will only accept a new stick into his collection if its length is exactly length $n + 1$ cm where n is the number of sticks currently in his collection. This implies his collection of n sticks contains exactly one stick of length 1 cm through n cm.

One day Alice visited Bob to inspect his stick collection (upon Bob's insistence of course). Alice wasn't particularly interested in Bob's excessive descriptions and needed a quick conversation changer. Cleverly, she posed the following question to Bob: "If you are allowed to take any 3 sticks from your collection, how many different triangles can you make?"

Can you help Bob answer the question so he can get back to telling Alice about his sticks?

Input The input will begin with t ($1 \leq t \leq 100000$), the number of test cases. Each test case will contain an integer n ($3 \leq n \leq 1000000$), the number of sticks in Bob's collection. (Recall if Bob has n sticks, then he has exactly one stick of each of the lengths from 1 cm through n cm.)

Output For each test case, output on a line the number of different triangles you can make with Bob's sticks. Triangles X and Y are different if there is at least one stick in X that is not in Y. A triangle has an area strictly greater than 0.

Sample Input	**Sample Output**
3	
3	0
4	1
10	50