

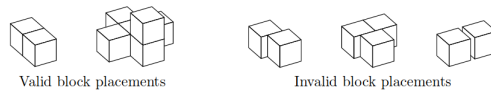
Omkar and Pyramid.

Assignment 2

Computer Programming

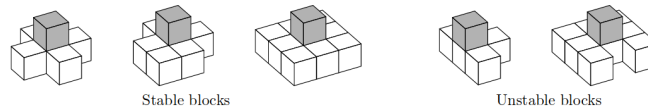
Due date: 10th October, 2019

Description: King Omkar is worried about his legacy, so he wants to build a pyramid as high as possible. A pyramid consists of blocks. Each block is a $1 \times 1 \times 1$ cube. If the pyramid contains more than one block, then each block must share a face with at least one of the other blocks.



A block is said to be stable if it obeys any one of the following rules:

1. It is placed on ground.
2. It is placed on a block B2 such that B2 shares each of its face either with ground or with another block.



A pyramid is said to be stable if all the blocks in it are stable.

N such blocks are available. You need to determine maximum height H , such that a pyramid of height H can be constructed using N blocks.

Input

First line contains T - no. of test cases.

Each of the next T lines contains a single integer N , no. of available blocks.

Output

Print T lines, i -th line should contain answer to i -th test case.

Constraints

$$1 \leq T \leq 10^5$$

$$1 \leq N \leq 10^9$$

Sample Test Case

Input	Output
3	2
6	1
5	3
20	