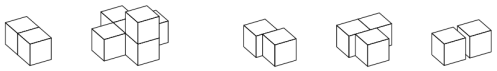
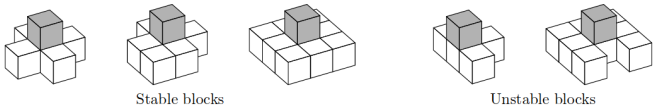
Omkar and Pyramid.

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 1x1x1 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 contains 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 6 5 20	2 1 3