# Coin Pyramid

# ZPRAC-16-17-Lab12

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COIN PYRAMID [40 Points]

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ANNOUNCEMENT:
Up to 20% marks will be allotted for good programming practice. These include
- Comments for non-trivial code
- Indentation: align your code properly
- Use dynamic memory allocation whenever array (any dimensional) is needed.

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John has n coins with him. He starts making a triangle, in the first row, he keeps one coin, in the second row, he keeps two and so on.. in the ith row, he keeps i coins. Given his n coins, what is the maximum height of the complete triangle john can make?

Input:
First line is t, denoting the number for cases of n for which you have to solve this problem,
The next t lines contain a number n, for each n, you have to calculate the max height.

Output:
t lines, each line has answer for the corresponding n
Constraints:

$1 \leq t \leq 100$

$1 \leq n \leq 10^{17}$

Example:
Input
2
5
6

Output:
2
3

Hint / Caution:
1) Numbers such as 10^18 are large and cannot be stored in int variable, hence use long long instead of int, and when using scanf and printf for long long, use %lld, instead of %d. Then you can use long long like integers, think of them as integers with larger capacity (upto 10^18).

2) Binary search. Solution without binary search will yield no credit.