

Problem Title: Minimum Number of Perfect Squares to Sum to N

Company: Facebook

Problem Description:

You are given a positive integer n . Your task is to determine the **smallest number of perfect square numbers** that sum exactly to n .

A perfect square is an integer that is the square of an integer (e.g., 1, 4, 9, 16, ...).

This problem requires finding the minimum count of perfect squares whose sum equals n . The same perfect square can be used multiple times if necessary.

Scenario:

Imagine you're a cashier with coins whose values are **only perfect squares** (1, 4, 9, 16, ...). You have to give change for an amount n using **the fewest coins possible**. Your goal is to figure out the **minimum number of coins** you need.

Input Format:

- A single integer n ($1 \leq n \leq 10^4$)
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Output Format:

- A single integer — the minimum number of perfect squares whose sum equals n .
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Constraints:

- $1 \leq n \leq 10^4$
 - You can use any perfect square as many times as needed.
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Example 1:

Input:

13

Output:

2

Explanation:

$13 = 9 (3^2) + 4 (2^2) \rightarrow 2$ perfect squares.

Example 2:**Input:**

27

Output:

3

Explanation:

$27 = 9 + 9 + 9 \rightarrow 3$ perfect squares.

Example 3:**Input:**

1

Output:

1

Explanation:

$1 = 1^2 \rightarrow$ Only 1 perfect square needed.

Practice Links:

- [LeetCode – Perfect Squares](#)
 - [GeeksforGeeks – Minimum number of squares whose sum equals to given number n](#)
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Video Explanations:

- [YouTube – Perfect Squares Problem Explained](#)
- [YouTube – Dynamic Programming Approach for Perfect Squares](#)