

Two Squares

Given an integer, how many distinct ways it can be written as the sum of two square integers? The square integers are 0,1,4,9,...

Since addition is commutative, reordered sums (e.g. $0^2 + 5^2$ and $5^2 + 0^2$) are not distinct and count as just one way.

For example, 50 can be written as a sum of squares in exactly two distinct ways: $1^2 + 7^2$ and $5^2 + 5^2$.

Input:

An integer N, from 0 to one quadrillion (10^{15}) inclusive.

Output:

The number of distinct ways N can be written as the sum of squares.

Example Input 1:

3

Example Output 1:

0

Example Input 2:

50

Example Output 2:

2

Example Input 3:

97682

Example Output 3:

5