

Programming Refresher Workshop

Exercise 3 (ex3): Perfect Square

Given an integer, a perfect square is the square of the integer. For example, 16 is a perfect square of 4 while 24 is not a perfect square of 5. You are to implement program that will determine whether a given series of integers are perfect squares or not.

Input

The first line of input contains an integer N.

This is followed by N lines of input each with an integer.

Output

For each integer, output the integer followed by " is a perfect square." if it is a perfect square. Otherwise, output the integer followed by " is not a perfect square."

Sample input

4
36
325
3136
4761

Sample output

36 is a perfect square.
325 is not a perfect square.
3136 is a perfect square.
4761 is a perfect square.

Note:

1. you should implement your program without using any pre-defined library routine such as **sqrt**.
2. Make sure your output adheres to the given format.