

You are to determinate X by given Y , from expression $X = \sqrt{Y}$

Input

The first line is the number of test cases, followed by a blank line.

Each test case of the input contains a positive integer Y ($1 \leq Y \leq 10^{1000}$), with no blanks or leading zeroes in it.

It is guaranteed, that for given Y , X will be always an integer.

Each test case will be separated by a single line.

Output

For each test case, your program should print X in the same format as Y was given in input.

Print a blank line between the outputs for two consecutive test cases.

Sample Input

1

7206604678144

Sample Output

2684512