

Sum the Decimal-part I

You are given a number. You need to output the sum of the first 10 decimal places of the square-root of the number (Ignore the Integral part).

For example-if the given number is 2. The square-root of 2 is 1.4142135623.....

So, ignore the number before decimal (1 in this case) and add the first ten digits after decimal and output them as result

The answer should be $(4+1+4+2+1+3+5+6+2+3)$ 31.

NOTE-If the number is a perfect square, the output should be 0.

Input

the first line of input consist of t (the number of test cases).
t lines follow-Each line consist of a non-negative integer n.

Output

Output in separate lines the result corresponding to integer n.

Constraints

$1 \leq n \leq 100000$

Example

Input:

2
4
2

Output:

0
31

For a higher difficulty level of this problem, try out [SUMDEC2](#)