

# How many can you sort?

## Problem Statement :

You have invented a new sorting algorithm which can sort  $n$  integers in exactly  $n \log_3 n$  time. (which is faster than almost every sorting algorithm till date). You have proved the correctness of your algorithm to your professor.

The professor now asks you what is the maximum number of integers that you can sort in a given time  $T$ .

**Note :**  $\log_3 = (\log \text{ to the base } 3)$

Proper usage of type casting is required to solve this problem. For testing purposes you can use this [high precision calculator](#).

## Input :

The first line consists of an integer  $t$ . For each test case, you are given an integer  $T$ , the time to sort the integers.

## Output :

For each test case, print the maximum number of integers that you can sort in  $T$  time.

## Input Constraints :

$$1 \leq t \leq 10^5$$

$$3 \leq T \leq 10^{10}$$

## Time limit :

1 second

## Example :

### Sample Input :

4

3

10

10000000000

4374

### Sample Output :

3

6

546076908

729