02 : 23 : 37 : 16
DAY HRS MIN SEC

8 LIVE EVENTS

Codathon - Inter NIT Coding Contest 2018

LIVE

Jan 15, 2018, 06:00 PM IST - Jan 22, 2018, 06:00 PM IST

DAY 4 - Training the Joker

Max. Marks: 100

In a parallel universe, **The Joker** is a very good guy !!! He wishes to save as many people as possible of city Gotham from the criminals. For this purpose he decides to take Ninja training .There are **three** types of training he can get.

TYPE 1- on any given day, the cost of training is equal to the day number. i.e, on day **1** he pays **1** unit, on day **2** he pays **2** units, on day **3** he pays **3** units so on.

TYPE 2- on any given day, the cost of training is equal to the **square** of that particular day number. i.e, on day **1** he pays 1^2 units, on day **2** he pays 2^2 units, on day **3** he pays 3^2 units so on.

TYPE 3- on any given day, the cost of training is equal to the **cube** of that particular day number. i.e, on day **1** he pays 1^3 units, on day **2** he pays 2^3 units, on day **3** he pays 3^3 units so on.

For **D** days of training, the total cost will be equal to the sum of the amount he paid each day.

Now you are given **Q** number of queries. Each query consists of two integers **N** and **K**. **K** is the type of training in which he enrolls. **N** is the amount of money he has. For each query, calculate the maximum number of days he can take training (of type **K**) with **N** units of money.

INPUT -

The first line of the input contains a single integer **Q** denoting the number of queries. Each of the next **Q** lines contains two space separated integers **N** and **K**. **N** is the amount of money he has and **K** denotes the type of Ninja training in which he enrolled.

OUTPUT -

For each query, calculate the maximum number of days of training he can afford and print the answer in a new line.

CONSTRAINTS -

$1 \le Q \le 10^6$

?

$0 \le N \le 10^{18}$

$1 \le K \le 3$

SAMPLE INPUT

```
5
2 3
2 3
5 1
4 3
5 3
```

SAMPLE OUTPUT

```
1
1
2
1
1
```

Explanation

In the sample input, there are 5 queries.

In the first query, N = 2 and K = 3. on day one he pays 1^3 units. Remaining amount is 2 - 1 = 1 units. For day 2 he has to pay 2^3 = 8 units. Therefore, he cannot afford day 2.Therefore, he takes training for only one day.

In the third query, N = 5 and K = 1 . On day one he pays 1 unit. On day 2 he pays 2 units. So, total cost for 2 days is 3 units. Remaining amount is 5 - 3 = 2. On day 3 he has to pay 3 units. But, he has only 2 units. Therefore, he can afford maximum of 2 days of Type 1 training.

Time Limit:	1.0 sec(s) for each input file.
Memory Limit:	256 MB
Source Limit:	1024 KB
Marking Scheme:	Marks are awarded if any testcase passes.
Allowed Languages:	C, C++, C++14, Clojure, C#, D, Erlang, F#, Go, Groovy, Haskell, Java, Java 8, JavaScript(Rhino), JavaScript(Node.js), Julia, Kotlin, Lisp, Lisp (SBCL), Lua, Objective-C, OCaml, Octave, Pascal, Perl, PHP, Python, Python 3, R(RScript), Racket, Ruby, Rust, Scala, Swift, Visual Basic

CODE EDITOR

Enter your code or Upload your code as file. Save C (gcc 5.4.0)

```
1 /*
```

```
// Sample code to perform I/O:

scanf("%s", name);              // Reading input from STDIN
printf("Hi, %s.\n", name);      // Writing output to STDOUT

// Warning: Printing unwanted or ill-formatted data to output will cause the tes
*/

// Write your code here

```

1:1

Provide custom input

Press Ctrl-space for autocomplete suggestions.

COMPILE & TEST SUBMIT

Tip: You can submit any number of times you want. Your best submission is considered for computing total score.

Your Rating: Like 0 Share Tweet