H Fraction and Sequence

An infinite integer sequence (**S**) can be generated from the following quadratic equation

S(x) = ax^2 + bx + c [a, b, c are non-negative integers]

and **x** = 0→ **∞** (**x** is integer)

S(**x**) is the **x**th element of sequence **S**.

For example, if **a**=0, **b**=1 and **c**=0, then **S(x) = x**

So the sequence will be: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 … **∞**

A fraction **p/q** (p and q are relatively prime) is associated with the sequence **S** in such way that

$$\frac{p}{q} = \sum_{x=0}^{\infty} S(x)\left(\frac{1}{10}\right)^{X+1}$$

Here sequence 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 …**∞** is associated with fraction

$$\frac{1}{81} = \frac{0}{10} + \frac{1}{10^2} + \frac{2}{10^3} + \frac{3}{10^4} + \cdots = 0.0123456790\ldots$$

(explained in right)

0.0 +
0.01 +
0.002 +
0.0003 +
0.00004 +
0.000005 +
0.0000006 +
0.00000007 +
0.000000008 +
0.0000000009 +
0.00000000010 +
……
____
0.0123456790…

In summary, for a given triplet **a, b, c** there will be a sequence **S** and for a sequence **S** there will be a fraction **p/q**

But for this problem fraction **p/q** will be given. You have to find out how many integer triples (a, b, c) exist for some given limit **L** where 0 ≤ **a, b, c** ≤ **L**.

Input

Given **T** (≤ 10^4) denoting number of test cases. Each case consists of **3** positive integers **p**, **q** and **L**.

p and **q** are relatively prime to each other.

L is the maximum value for **a**, **b**, **c**. Denominator **q** > 1 and **p**, **q** ≤ 10^7 and **L** ≤ 10^5

Output

You have to report the number of **integer** triples (**a**, **b**, **c**) that can be formed where 0 ≤ **a, b, c** ≤ **L**. See sample Input output for format.

Sample Input	**Sample Output**
3 1 81 100 2 3 20 2 3 100000	Case 1: 1 Case 2: 7 Case 3: 21

Problem Setter: Masud Rashid
Alternate Writer: Syed Shahriar Manjur