13041 Fraction and Sequence

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

$$S(x) = ax^2 + bx + c \qquad [a,\ b,\ c \text{ are non-negative integers] and } x = 0 \to \infty \ (x \text{ is integer})$$

$S(x)$ 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, $\ldots\infty$

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, $\ldots\infty$ is associated with fraction

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

(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 $0 \le a, b, c \le L$.

Input

Given T ($\le 10^4$) 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 $p, q \le 10^7$ and $L \le 10^5$

Output

You have to report the number of **integer** triples (a, b, c) that can be formed where $0 \le a, b, c \le L$.

See sample Input output for format.

Sample Input

```
3
1 81 100
2 3 20
2 3 100000
```

Sample Output

```
Case 1: 1
Case 2: 7
Case 3: 21
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