# Sum Squared Digits Function

**Problem ID:** sumsquared
**CPU Time limit:** 1 secon
**Memory limit:** 1024 MB
**Difficulty:** 1.4

**Source:** 2017 Greater Ne
Region ACM Regional Co
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The *Sum Squared Digits* function, $SSD(b, n)$ of a positive integer $n$, in base $b$ is defined by representing $n$ in base $b$ as in:

$$n = a_0 + a_1 * b + a_2 * b^2 + \ldots$$

then:

$$SSD(b, n) = a_0^2 + a_1^2 + a_2^2 + \ldots$$

is the sum of squares of the digits of the representation.

Write a program to compute the *Sum Squared Digits* function of an input positive number.

## Input

The first line of input contains a single decimal integer $P$, ($1 \leq P \leq 1\,000$), which is the number of data sets that follow. Each data set should be processed identically and independently.

Each data set consists of a single line of input. It contains the data set number, $K$, followed by the base, $b$ ($3 \leq b \leq 16$) as a decimal integer, followed by the positive integer, $n$ (as a decimal integer) for which the Sum Squared Digits function is to be computed with respect to the base $b$. $n$ will fit in a 32 bit unsigned integer. The data set number $K$ starts at 1 and is incremented by 1 for each data set.

## Output

For each data set there is a single line of output.

The single line of output consists of the data set number, $K$, followed by a single space followed by the value of $SSD(b, n)$ as a decimal integer.

### Sample Input 1

```
3
1 10 1234
2 3 98765
3 16 987654321
```

### Sample Output 1

```
1 30
2 19
3 696
```