

A. Convert From Decimal

Given t integers called n in base 10, convert them to base x .

Input

The first line of input contains t , the amount of numbers you will have to convert.

The next t lines contain two numbers, x and n where x is the base you must convert it to and n is the original base 10 number.

| Input | Output |
|----------|--------|
| 6 | |
| 2 7 | 111 |
| 8 34 | 42 |
| 16 1792 | 700 |
| 19 12345 | 1F3E |
| 10 477 | 477 |
| 36 1295 | ZZ |

B. Convert To Decimal

Given t integers called n in base x , convert them to base 10.

Input

The first line of input contains t , the amount of numbers you will have to convert.

The next t lines contain two numbers, x and n where x is the base of the current number and n is the number in base x .

| Input | Output |
|---------|--------|
| 6 | |
| 2 111 | 7 |
| 8 42 | 34 |
| 16 700 | 1792 |
| 19 1F3E | 12345 |
| 10 477 | 477 |
| 36 ZZ | 1295 |

C. Add Two Numbers

You will be given t test cases.

Given a base k and two numbers x and y , output the sum of x and y .

It is guaranteed that x and y are provided to you in base k .

Input

The first line of input contains t , the number of test cases.

Then there will be t lines that contain three variables.

The first number on each line is k , the base that you are working in.

The next two numbers are x and y .

| Input | Output |
|----------------|--------|
| 9 | |
| 10 78 30 | 108 |
| 2 1001 1100 | 10101 |
| 8 1362 36 | 1420 |
| 16 7B14AD 5A6C | 7B6F19 |
| 19 GH2B9 43999 | 121C1I |
| 36 ZZZZ ZZZZ | 1ZZZY |
| 13 13 91 | A4 |
| 5 4321 23 | 4344 |
| 36 LEHR RBQVUV | RCCACM |