2876 Decimal Expansion

Given a positive integer n followed by n pairs of positive six-digit integers $a_1, b_1, a_2, b_2, \ldots, a_n, b_n$ with $10 > a_i/b_i > 1$ for all i, write a program:

a) To determine for each pair a_i and b_i the first $d_0 d_1 d_2 \ldots d_{199}$ 200 digits of the decimal value of a_i/b_i.

b) To determine if the expansion is periodical, indicating the **sequence of repeating digits**.

Hint: The sequence $d_0 d_1 d_2 \ldots d_m$ represents the desired decimal expansion. It is periodic if and only if for two values s and t $(0 \leq s < t \leq m)$ $r(s) = r(t)$, where $r(s)$ and $r(t)$ are the remainders at steps s and t, then the sequence of digits $d_s, d_{s+1}, d_{s+2}, \ldots, d_{t-1}$ is the sequence of repeating digits.

Input

The input is composed with the value n, followed of n pairs of positive six-digit integers.

Output

The output keeps the pair of numbers that has been processed and the result of the first 200 decimal digits and the sequence of repeating digits, if it is possible.

Note: As the records in sample output were too long for printing, we've truncated to 70 characters. Anyway, your output should print each record in a line, no matter how long it is.

Sample Input

```
5
765432    654321
987621    654389
913423    143423
143428    120000
876564    653901
```

Sample Output

```
765432 654321
11698111477394123068035413810652569610328875276813674022383509011631 9
05440907444511180292241881278455070217828863814549739348118125507205 1
79109336243220070882640172025657131591374875634436308784220588
987621 654389
15092261636427262683205249476993042364709675743326981352070404606434 3
99111232004205449663732122636535760839500663978153667008461328047995 9
16801779981020463363534533740634393304288427831152418515592407
913423 143423
63687344428717848601688711015666943237834935819220069305480989799404 5
58543608765679144907023280784811362194348186831958611938113133876714 3
34520962467665576650885841183073844501927863731758504563424276
```

```
143428 120000
119523 sequence of repeating digits: 3
876564 653901
1340514848577995751650479200979964857065519092339666096243926832960952
2804782375313694274821417921061445081136135286534200131212522996600402
2813269898654383461716681883037 sequence of repeating digits:
3405148485779957516504792009799648570655190923396660962439268329609520
8047823753136942748214179210614450811361352865342001312125229966004020
8132698986543834617166818830370
```