

Contest Duration: 2025-09-14(Sun) 22:00 (<http://www.timeanddate.com/worldclock/fixedtime.html?iso=20250914T2100&p1=248>) - 2025-09-14(Sun) 23:40 (<http://www.timeanddate.com/worldclock/fixedtime.html?iso=20250914T2240&p1=248>) (local time) (100 minutes)

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## G - Small Multiple 2

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Time Limit: 2 sec / Memory Limit: 1024 MiB

Score : 600 points

### Problem Statement

Find the minimum possible value of a positive integer  $n$  that satisfies the following two conditions:

- $n$  is a multiple of  $K$ .
- The decimal representation of  $n$  contains  $S$  as a substring.

$T$  test cases are given, so find the answer for each.

► What is a substring?

### Constraints

- $T$  is an integer.
- $1 \leq T \leq 200$
- $K$  is an integer.
- $1 \leq K \leq 10^9$
- $S$  is a string consisting of digits (0 - 9).
- The first character of  $S$  is not 0.
- $1 \leq |S| \leq 5 \times 10^5$
- For each input file, the sum of  $|S|$  over all test cases is at most  $5 \times 10^5$ .

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# Input

The input is given from Standard Input in the following format:

```
 $T$   
case1  
case2  
⋮  
case $T$ 
```

case <sub>$i$</sub>  represents the  $i$ -th test case. Each test case is given in the following format:

```
 $K$   
 $S$ 
```

# Output

Output  $T$  lines. The  $i$ -th line ( $1 \leq i \leq T$ ) should contain the answer to the  $i$ -th test case.

## Sample Input 1

[Copy](#)

```
4  
271  
414  
15  
23  
155521  
1000  
920950937  
99999999999999999999
```

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## Sample Output 1

[Copy](#)

```
34146  
1230  
100000003  
10000009999999999999999999
```

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In the first test case, among positive integers that are multiples of 271, the minimum one whose decimal representation contains 414 as a substring is 34146.

In the second test case, among positive integers that are multiples of 15, the minimum one whose decimal representation contains 23 as a substring is 1230.

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In the third test case, among positive integers that are multiples of 155521, the minimum one whose decimal representation contains 1000 as a substring is 100000003.

In the fourth test case, among positive integers that are multiples of 920950937, the minimum one whose decimal representation contains 99999999999999999999 as a substring is 100000099999999999999999999999999.

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'#telegram)

url=https%3A%2F%2Fatcoder.jp%2Fcontests%2Fabc423%2Ftasks%2Fabc423\_g%3Flang%3Den&title=G%20-

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