Problem C
Do Not Hex My Numbers!
Time Limit: 3 seconds

Given an integer N and list of D hexadecimal digits, what is the smallest positive integer X, whose representation in base 16 consists only of given digits, such that X is divisible by N?

Input

The first line of the input file starts with the integer T, the number of test cases $(1 \le T \le 100)$.

Each test case consists of two lines, in the following format:
$N\ D$
$d_1\ d_2 \ldots d_D$

$N(1 \le N \le 200,000)$ and $D(1 \le D \le 16)$ are as described in the problem statement (both given here in base 10) and $d_i(1 \le i \le D)$ are heximal digits allowed to be used in the result. You can assume that digits are sorted.

Output

For each test case, output the smallest positive number X in base 16 such that X is divisible by N and it contains only digits provided. If there is no such number, output "no solution" instead.

Sample Input

```
4
1 3
a b c
2 8
1 3 5 7 9 b d f
1207 3
1 a f
33910 4
0 c e f
```

Sample Output

```
a
no solution
1aa1aa
c0ffee
```