Sereja and Number Division 2

Problem code: SEAND2

Read problems statements in Mandarin Chinese and Russian.

Sereja has an integer number **A** that doesn't contain zeroes in its decimal form.
Also he has **N** integers **B[1], B[2], ..., B[N]**.

Let us first define function **f** for a number **A** as follows.

$$f(A) = \sum_{i=1}^{N} (A \pmod{B[i]})$$

Now he has to reorder the digits of **A** such that **f(A)** is minimum.
Please help him in finding most optimal **A**.

Input

- First line contain a single integer **T** denoting number of test cases. Then **T** tests follow.
- First line of each test case contains an integer **A**.
- Next line contains an integer **N**.
- Next line contains **N** integers **B[1], B[2], ..., B[N]**.

Output

For each test case, output optimal value of **A** after reordering digits in a single line.

Constraints

- **1 ≤ T ≤ 100**
- **1 ≤ A ≤ 10^{1000}**
- **N = 100**
- **1 ≤ B[i] ≤ 10^6**

Example

Input:
2
123
2
2 3
123457
1
10

Output:
312
754312

Scoring

Let **Y** denotes your score for the problem. **Y** is defined as sum of **f(optimal A))** for all test cases.
You objective is to make **Y** as small as possible.

Tests generation Plan

Test set contains **five** official test cases.
During the contest, your solution will be tested only on the first test. After the end of contest, it will be re-judged on the full test set.

Length of number **A** is generated randomly. All digits of it are also chosen randomly.

In all test cases **N** is equal to **100**.

To generate array **B**, first we chose an integer **R** between **1** and **10^6** inclusive. Note that **R** is not randomly generated, it will be manually selected.

Then all elements of array **B** are chosen in range **1..R** randomly.

Author:	sereja
Tester:	shiplu
Date Added:	10-09-2014
Time Limit:	5 sec
Source Limit:	50000 Bytes
Languages:	ADA, ASM, BASH, BF, C, C99 strict, CAML, CLOJ, CLPS, CPP 4.3.2, CPP 4.8.1, CPP11, CS2, D, ERL, FORT, FS, GO, HASK, ICK, ICON, JAVA, JS, LISP clisp, LISP sbcl, LUA, NEM, NICE, NODEJS, PAS fpc, PAS gpc, PERL, PERL6, PHP, PIKE, PRLG, PYTH,

SUCCESSFUL SUBMISSIONS

User	Score	Mem	Lang	Solution
zhouyuchen	1.000	42M	C++11	View
yowa	0.999	3.4M	C++11	View
alex_2oo8	0.998	1399M	JAVA	View
tomerun	0.990	1399M	JAVA	View
rns4	0.984	47.2M	C++ 4.8.1	View
atetubou	0.983	25.4M	C++11	View
mugurelionut	0.978	7.7M	C++11	View
argos	0.976	3.2M	C++ 4.3.2	View
ushsh	0.971	3.1M	C++ 4.3.2	View
vytenis	0.971	6.6M	C++11	View
ACRush	0.966	242.9M	C++ 4.3.2	View
lg5293	0.965	1400M	JAVA	View

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PYTH 3.1.2, RUBY, SCALA, SCM guile, SCM qobi, ST, TCL, TEXT, WSPC

SUBMIT

Comments

Need help? Post a comment. But before that please spare a moment to read the guidelines.

Your name:
henviso

Comment: *

Save

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CodeChef was created as a platform to help programmers make it big in the world of algorithms, **computer programming** and **programming contests**. At CodeChef we work hard to revive the geek in you by hosting a **programming contest** at the start of the month and another smaller programming challenge in the middle of the month. We also aim to have training sessions and discussions related to **algorithms, binary search**, technicalities like **array size** and the likes. Apart from providing a platform for **programming competitions**, CodeChef also has various algorithm tutorials and forum discussions to help those who are new to the world of **computer programming**.

Practice Section - A Place to hone your 'Computer Programming Skills'

Try your hand at one of our many practice problems and submit your solution in a language of your choice. Our **programming contest** judge accepts solutions in over 35+ programming languages. Preparing for coding contests were never this much fun! Receive points, and move up through the CodeChef ranks. Use our practice section to better prepare yourself for the multiple **programming challenges** that take place through-out the month on CodeChef.

Compete - Monthly Programming Contests and Cook-offs

Here is where you can show off your **computer programming** skills. Take part in our 10 day long monthly **coding contest** and the shorter format Cook-off **coding contest**. Put yourself up for recognition and win great prizes. Our **programming contests** have prizes worth up to Rs.20,000 and $700lots more CodeChef goodies up for grabs.

Discuss

Are you new to **computer programming**? Do you need help with algorithms? Then be a part of CodeChef's Forums and interact with all our programmers - they love helping out other programmers and sharing their ideas. Have discussions around **binary search, array size, branch-and-bound, Dijkstra's algorithm, Encryption algorithm** and more by visiting the CodeChef Forums and Wiki section.

CodeChef Community

As part of our Educational initiative, we give institutes the opportunity to associate with CodeChef in the form of Campus Chapters. Hosting **online programming competitions** is not the only feature on CodeChef. You can also host a **coding contest** for your institute on CodeChef, organize an **algorithm** event and be a guest author on our blog.

Go For Gold

The Go for Gold Initiative was launched about a year after CodeChef was incepted, to help prepare Indian students for the **ACM ICPC** World Finals competition. In the run up to the **ACM ICPC** competition, the Go for Gold initiative uses CodeChef as a platform to train students for the **ACM ICPC** competition via multiple warm up contests. As an added incentive the Go for Gold initiative is also offering over Rs.8 lacs to the Indian team that beats the 29th position at the **ACM ICPC** world finals. Find out more about the Go for Gold and the **ACM ICPC** competition here.