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CS1010E Practice Exercise: Kapreka Constant

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Task Content

Kaprekar's Constant

Take any four-digit number with at least two different digits (with leading zeros allowed). Arrange the digits to form the largest and smallest numbers, and subtract the smallest from the largest. Repeat the process with this new number.

For example, starting with the number 1010,

- $1100 - 0011 = 1089$
- $9810 - 0189 = 9621$
- $9621 - 1269 = 8352$
- $8532 - 2358 = 6174$
- $7641 - 1467 = 6174$

Write a program that reads in a four-digit number and outputs the results of subtraction until the last two output shows the same value.

Sample Runs

The following are sample runs of the program. User input is underlined. Ensure that the last line of output is followed by a newline character.

- Sample run #1:

```
Enter number: 1010
1089
9621
8352
6174
6174
```

- Sample run #2:

```
Enter number: 0011
1089
9621
8352
6174
6174
```

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