

Class is a fundamental programming unit in C++. The data members and member function provide good example of information hiding. With appropriate constructor, the declaration and initialization of objects are very easy to handle. Your goal is to write a class with three class members, including a constructor with one argument of type string, a private data member of type string, a public member function. The constructor uses the string parameter to initialize the class data member. The member function calculate the compaction sum of the characters in the string. The compaction sum is defined as follows:

First sum all the characters.

While the value of sum is greater than or equal to ten, replace the sum by the summation of sum's all digits.

Requirement: Define the class and use string object to receive the input and initialize the class object. The calculation of output can only be done in the member function.

Prohibited: Use C-style input/output.

Input

There are 500 cases and each case is one line of characters.

Output

For each line of input, output the compaction sum defined above with end line stream manipulator.

Sample Input

A
AB
a
ab

Sample Output

2
5
7
6