

<codeClash>2019

Code Clash Official Problem #7 'Artifacts'

Problem statement

A museum has a database of ancient documents and artifacts that they have copies of throughout the displays. Many of these documents and artifacts will have numbers written on them, many of them are written in Roman numerals. It is difficult for the computer to do processing on these Roman numerals without first converting them to standard base 10 numbers, so it is necessary to create a program that can convert to and from Roman numerals.

The first line of input will contain an integer with the number of test cases to follow. Each subsequent line will contain a number in either roman numeral format or a base 10 integer. Output your result as the opposite. All numbers will be non-negative and no greater than 3999.

Principles of Roman numerals: Write numerals left to right, with the largest numeral first. The largest numeral possible is used at each stage. No more than three instances of same adjacent numeral. A smaller numeral such as I or X placed before a larger one has the effect of subtraction - thus IV is one less than five, or four. Only one numeral can be placed to the left. The small numeral must be a power of ten: I, X or C. In Roman numerals, I = 1, V = 5, X = 10, L = 50, C = 100, D = 500, and M = 1000.

Sample test case

Sample input and output for this problem:

Input	Output
5	19
XIX	XXIX
29	147
CXLVII	MMCDLXXVI
2476	MX
1010	