

# Day 4

Tags

hashtable

## Roman Empire

Roman numerals are represented by seven different symbols: **I**, **V**, **X**, **L**, **C**, **D** and **M**.

Symbol	Value
I	1
V	5
X	10
L	50
C	100
D	500
M	1000

For example, two is written as **II** in Roman numeral, just two one's added together. Twelve is written as, **XII**, which is simply **X** + **II**. The number twenty seven is written as **XXVII**, which is **XX** + **V** + **II**.

Roman numerals are usually written largest to smallest from left to right. However, the numeral for four is not **IIII**. Instead, the number four is written as **IV**. Because the one is before the five we subtract it making four. The same principle applies to the number nine, which is written as **IX**. There are six instances where subtraction is used:

- **I** can be placed before **V** (5) and **X** (10) to make 4 and 9.
- **X** can be placed before **L** (50) and **C** (100) to make 40 and 90.
- **C** can be placed before **D** (500) and **M** (1000) to make 400 and 900.

Given a roman numeral, convert it to an integer. Input is guaranteed to be within the range from 1 to 3999.

## Examples

```
Input: "III"  
Output: 3
```

```
Input: "XV"  
Output: 15
```

```
Input: "MCD"  
Output: 1400
```

```
Input: "IX"  
Output: 9
```

**Note:**

- Runtime matters. Faster algorithms will be ranked higher.
- Clean code matters. Ranking will be affected by readability.
- Feel free to add more complexity.
- Be creative.
- Could you convert from decimal to roman?