Given a roman numeral, convert it to an integer.

Input is guaranteed to be within the range from 1 to 3999.

Solution: We need to first understand the values of various roman characters.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Symbol** | [I](https://en.wikipedia.org/wiki/I) | [V](https://en.wikipedia.org/wiki/V) | [X](https://en.wikipedia.org/wiki/X) | [L](https://en.wikipedia.org/wiki/L) | [C](https://en.wikipedia.org/wiki/C) | [D](https://en.wikipedia.org/wiki/D) | [M](https://en.wikipedia.org/wiki/M) |
| **Value** | 1 | 5 | 10 | 50 | 100 | 500 | 1,000 |

Then, we need to understand how they are represented. By observing few numbers from the image below, we understand that smaller valued roman letter before a larger valued roman letter indicates than smaller valued roman letter has to be subtracted from the next symbol (large valued roman letter). Otherwise, add it to the next roman symbol’s value.   
We can do this in reverse. If the value at index ‘i’ is ≤ value at ‘i-1’, then add the values. If value at index ‘i’ is > value at ‘i-1’ subtract the values. Keep a running sum which is initialized to zero.

