Problem D: Alien Calculator?

The engineers on the alien planet Prefixia are famous throughout the galaxy for their weird calculators. A remarkable feature of a Prefixion calculator is that the user must always first push a math symbol button before pressing any number buttons. This allows the Prefixions to enter long multistep math problems as a single input before computing a final result.

NASA has contracted you to build a calculator that operates in the same way as the famous Prefixion calculator.

The input to your calculator must be entered as string of mathematical symbols and numerals. Each character in this string is either of the following:

- One of three alien math symbols: +, -, or #.
  OR
- A numerical digit: 0-9

If the symbol is +, the calculator will answer with the sum of the next 2 values.

If the symbol is -, compute the difference of the next 2 values.

If the symbol is #, compute the next value times 10, plus the following value.

Important Note: Symbols can immediately follow other symbols in which case the calculator must determine the value of the second operation before it can compute the answer to the first operation. Prefixion math symbols can be chained together in this fashion indefinitely.

Input (from file d.in)

Input will always be valid. Math symbols will always be followed by a valid number of digits or math symbols. For example, "+3" is not valid input; therefore this input will not occur in the input file.

Input will only contain the digits 0-9 and characters +, -, and #.

All number in input strings are single digits. (Prefixion calculators do not support input values greater than 9.)

Take the following explanations for example:

Input: #+124
Explanation: [10 * (1 + 2)] + 4
Result: 34

Input: #+12-56
Explanation [10 * (1 + 2)] + (5 - 6)
Result: 29

Output (to monitor)

The numeric output must be printed to the monitor followed by a new line.

Sample Input

```
+12
#44
#+124
#+12-56
```

Sample Output

```
3
44
34
29
```