

< Back | Short Python solutions, one  $O(n)$

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[StefanPochmann](#)
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$O(n)$  with stack

Collect chars from back to front on a stack, evaluate ternary sub-expressions as soon as possible:

```
def parseTernary(self, expression):
    stack = []
    for c in reversed(expression):
        stack.append(c)
        if stack[-2:-1] == ['?']:
            stack[-5] = stack[-3] if stack[-1] == 'T' else -5
    return stack[0]
```

Originally my check was `stack[-4:-2] == [':', '?']`, but @YIL1228's is right, looking for `?` is enough.

$O(n^2)$ , several versions

Always evaluate/replace the last included ternary. So somewhat the same as the stack solution but only  $O(n^2)$ . Didn't think of that and instead went right for the stack solution, but now that I saw it from others, I just had to write a few ways myself :)

Version just working on the string:

```
def parseTernary(self, s):
    while len(s) > 1:
        i = s.rfind('?') - 1
        s = s[:i] + s[i+2] if s[i] == 'T' else i+4 + s[i+5:]
    return s
```

Version working on a list version of the string because it can be modified (need to reverse it because lists can only tell the first occurrence, not the last):

```
def parseTernary(self, s):
    a = list(s[::-1])
    while len(a) > 1:
        i = a.index('?') - 3
        a[i:i+5] = a[i+2] if a[i+4] == 'T' else 1
    return a[0]
```

Version using a regular expression (reversing the string because `sub` doesn't support replacing the last occurrence but does support replacing the first):

```
def parseTernary(self, s):
    s = s[::-1]
    while len(s) > 1:
        s = re.sub('(.+)\?(-.+)', lambda m: m.group(1) + (m.group(3) == 'T'), s, 1)
    return s
```

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