

# 439. Ternary Expression Parser Premium

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Given a string `expression` representing arbitrarily nested ternary expressions, evaluate the expression, and return *the result of it*.

You can always assume that the given expression is valid and only contains digits, `'?'`, `':'`, `'T'`, and `'F'` where `'T'` is true and `'F'` is false. All the numbers in the expression are **one-digit** numbers (i.e., in the range `[0, 9]`).

The conditional expressions group right-to-left (as usual in most languages), and the result of the expression will always evaluate to either a digit, `'T'` or `'F'`.

### Example 1:

**Input:** `expression = "T?2:3"`  
**Output:** `"2"`  
**Explanation:** If true, then result is 2; otherwise result is 3.

### Example 2:

**Input:** `expression = "F?1:T?4:5"`  
**Output:** `"4"`  
**Explanation:** The conditional expressions group right-to-left. Using parenthesis, it is read/evaluated as:  
`"(F ? 1 : (T ? 4 : 5))"`  $\rightarrow$  `"(F ? 1 : 4)"`  $\rightarrow$  `"4"`  
or `"(F ? 1 : (T ? 4 : 5))"`  $\rightarrow$  `"(T ? 4 : 5)"`  $\rightarrow$  `"4"`

### Example 3:

**Input:** `expression = "T?T?F:5:3"`  
**Output:** `"F"`  
**Explanation:** The conditional expressions group right-to-left. Using parenthesis, it is read/evaluated as:  
`"(T ? (T ? F : 5) : 3)"`  $\rightarrow$  `"(T ? F : 3)"`  $\rightarrow$  `"F"`  
`"(T ? (T ? F : 5) : 3)"`  $\rightarrow$  `"(T ? F : 5)"`  $\rightarrow$  `"F"`

### Constraints:

- `5 <= expression.length <= 104`
- `expression` consists of digits, `'T'`, `'F'`, `'?'`, and `':'`.
- It is **guaranteed** that `expression` is a valid ternary expression and that each number is a **one-digit number**.

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Yes   No

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