EXPERT QUESTIONS:

Feel free to experiment with these if you are familiar with Rust's macro system.

Question One: Church Numerals

This macro, when given a series of + and - characters, will return a Church numeral - either Zero, some nested sequence of Plus values (the depth of the nesting is the numeric value), or some nested sequence of Plus values inside a Minus value (representing a negative number).

Expected Output: `1`

Question 2: Bitwise Cyclic Tag

BCT is a turing complete programming language - given a program and a data string (each consisting of a series of 0s and 1s), it cycles through the program until the data string is empty. If the leftmost bit of the program string is 0, it deletes the leftmost bit of the data string, if the leftmost bit is 1, it copies the next bit of the program string to the end of the data string. After executing a step the bit(s) read from the program string are rotated to the end of the program string.
This macro reads in a program and data string and prints their values at each step until (and if) the program terminates.

Expected Output:

```
[0 , 1 , 0 , 0 , 0] -> [0 , 1]
[1 , 0 , 0 , 0 , 0] -> [1]
[0 , 0 , 0 , 1 , 0] -> [1, 0]
[0 , 0 , 1 , 0 , 0] -> [0]
[0 , 1 , 0 , 0 , 0] -> []
```

Question 3: Recurrence Relations

Recurrence relations are infinitely repeating sequences where each successive value is calculated from the values that came before (given some initial values). This macro returns an iterator for the supplied recurrence relation.

Expected Output:

```
Int(0)
Int(1)
Int(1)
Int(2)
Int(3)
Int(5)
Int(8)
Int(13)
Int(21)
Int(34)
```