— Problem 1: Santa's ladder —

"Maybe we should spend less time teaching kids to believe in Santa and more time teaching them to believe in themselves."

– Brooke Hampton, *Writer for the Huffington Post*

Santa is trying to deliver presents in a large apartment building, but he can't find the right floor - the directions he got are a little confusing. He starts on the ground floor (floor 0) and then follows the instructions one character at a time.

Where is Santa

An opening parenthesis, (, means he should go up one floor, and a closing parenthesis,), means he should go down one floor.

The apartment building is very tall, and the basement is very deep; he will never find the top or bottom floors.

For example:

```
(()) and ()() both result in floor 0.
((( and (()((( both result in floor 3.
))((((( also results in floor 3.
()) and ))( both result in floor −1 (the first basement level).
))) and )())()) both result in floor −3.
```

To what floor do the instructions take Santa?

The basement

Now, given the same instructions, find the position of the first character that causes him to enter the basement (floor -1). The first character in the instructions has position 1, the second character has position 2, and so on.

For example:

```
) causes him to enter the basement at character position 1.
()()) causes him to enter the basement at character position 5.
```

What is the position of the character that causes Santa to first enter the basement?