Learning Goals

- Understand what R is and recognize common syntax rules in R.
- Identify and troubleshoot basic errors in R.
- Use R as a calculator by applying arithmetic operations, grouping expressions with parentheses, and interpreting results.
- Create and use variables in R with the assignment operator ¡- to store and reuse values in calculations.

Reflection Questions

1. What might the following symbols tell us if we see them on an R line: #, +, >, <-

2. Explain the difference between a syntax error and a semantic error.

3. What are the order of operations in R?

4. Write the expression below as R code (run it in R to make sure you get 56 as the end result):

$$\left(3 + \frac{12}{2}\right)^2 - 5^2$$

Practice Problems

1. Write the following code to create two variables: `rectangle_length` which stores the value 15 and `rectangle_width` which stores the value 12.

2. Using the variables you made above, write the code needed to calculate the total area by multiplying the length and width (the result should be 180 when you run it in R).

3. If we were to accidentally type in the following code what number would this represent in scientific notation.

```
> rectangle_length^rectangle_width
```

4. Write the R code needed to see which variables we have defined in the global environment and then remove the `rectangle_width` variable. Why won't the previous problem's code work anymore?