Practice Problems on Computing, Part 1

Write a script that solves the following problems. First of all, you need to have R and RStudio installed. You can install R from here and RStudio from here.

1. Subtract 2 from 8.

2. Square 10.

3. Find the square root of 9.

4. Assign the value of 8 - 2 to the object `result`.

5. Multiply `result` times 4.

6. Assign the phrase (i.e., "character string") `"political science"` to the object `course`. In the code, leave a comment that describes what happens if you fail to use quotes around `"political science"`.

7. Reassign the phrase `"learning R"` to the object `course`.

8. Assign the character string `"5"` to the object `x`.

9. Multiply `result` times `x`. In a comment, explain what happens. Does it make sense?

10. Assign the numbers 52.8, 53.3, 50.3, 55.2, 49.0, 50.3, 55.7, 57.1, 54.9 as a vector to the object `turnout`. This is the percent turnout among the voting age population in presidential elections since 1980.

11. Use indexing to look at the fourth element of `turnout`.

12. Find the length of the vector `turnout`. Find the min, max, and mean.

13. Create a vector using the sequence function that does from 1980 to 2012 in increments of 4. Assign this vector to an object called `year`.

14. Let's briefly have a little fun and preview some of R's power. Use `plot(year, turnout)` to create a graph of turnout in U.S. presidential elections over time.

15. Replace the first value of `turnout` with a missing value.

16. Find the mean of the vector `turnout` (with the missing value). In a comment, explain the result. What does R return? Does that make sense?

17. Create a function that takes two inputs `x` and `p` and returns the value `x` raised to the `p` power. Assign this function to the object `power_up`. Use this function to compute 3^4.

18. Find the class of the objects `result`, `course`, `x`, `turnout`, `year`, `power_up`, and `mean`. Do these make sense?