1. **What is RMarkdown, and the three types of content in a RMarkdown file?**

   **Answer:**

   R Markdown provides an unified authoring framework for data science, combining your code, its results, and your prose commentary. R Markdown documents (like the one compiled here) are fully reproducible and support dozens of output formats, like PDFs, Word files, slideshows, and more. Its three components are:
   - An (optional) YAML header;
   - Chunks of R code; and
   - Text mixed with simple text formatting

2. **What will the following piece of code do?**

   ```r
   ggplot(data = mpg) + geom_point(mapping = aes(x = displ, y = hwy))
   ```

   **Answer:**

   It will use the `ggplot2` package to create a plot based on the `mpg` dataset, with the `displ` variable on the x-axis and the `hwy` variable on the y-axis.

3. **What is arrange()?**

   **Answer:**

   A function in `dplyr` to reorder the rows of a dataframe/tibble.

4. **Which are the three interrelated rules that make a dataset tidy?**

   **Answer:**

   The three rules are:
   - Each variable must have its own column.
   - Each observation must have its own row.
   - Each value must have its own cell.

5. **What is the difference between atomic vectors and lists?**

   **Answer:**

   The chief difference between atomic vectors and lists is that atomic vectors are
homogeneous (one of six types: logical, integer, double, character, complex, and raw),
while lists can be heterogeneous (you can have a list of characters, integers, and even
other lists).

6. **What will the ^ anchor do?**
   
   *Answer:*
   
   It will anchor the regular expression to match the start of the string.

7. **Write a function that replaces missing values with the mean of that vector.**
   
   *Answer:*
   
   The function is:
   ```r
   mean_impute <- function(x) {
     x[is.na(x)] <- mean(x, na.rm = TRUE);
     x
   }
   ```

8. **What are the three main components of a “for loop”?**
   
   *Answer:*
   
   Output, sequence, and body.

9. **What will the following piece of code do?**
   
   *Answer:*
   
   It will create an empty vector of type character and length 5.
   ```r
   output <- vector("double", length(5))
   ```

10. **What does the sequence i in seq_along(df) determine in a “for loop”?**
    
    *Answer:*
    
    It will determine what to loop over: each run of the for loop will assign i to a different
    value from seq_along(df).