INTRODUCTION TO R

EPsy 8251

Assignment #1

This assignment is intended to give you experience working with the R program. Please submit your responses to each of the questions below in a printed document. Label the sections as indicated below within your printed document. All graphics should be resized so that they do not take up more room than necessary and all should have an appropriate caption. Any equations should be appropriately typeset within the document. There are 10 points possible for the assignment (each question is worth one point).

PART I

In 2013, Andy read 40 books. The number of pages Andy read each month is reported in Table 1.

Table 1

Number of pages read per month.

Month	Pages
January	1453
February	422
March	848
April	1679
May	1665
June	1630
July	710
August	557
September	978
October	920
November	647
December	2698

Use R to carry out computations and provide answers to each of the following questions. Copy the syntax you used to carry out the computation, as well as any output from the computation, into your word-processed document.

1. Enter these data into a vector in R called `pages`. (Note: For this question you need only provide the syntax.)
2. Use the `sum()` function to find the total number of pages Andy read in 2013.
3. Use the `describe()` function from the **psych** package to summarize these data.
4. Enter the following syntax:

```
plot(pages, type = "b")
```

Copy the plot into your word-processed document.

5. Explain in 1–2 sentences what the plot shows.

PART II

Use RStudio to open the *GoodReads.csv* dataset and assign it into an object called `read`. Use the data to answer the following questions. Again, copy the syntax you used to carry out the computation, as well as any output from the computation, into your word-processed document.

6. Enter the following syntax. (Note: If you have not already done so, install the **dplyr** package prior to running these commands.)

```
library(dplyr)
p = read %.%
        group_by(MonthRead) %.%
        summarize(pages = sum(Pages))
p
```

Copy the resulting output into your word-processed document.

7. Explain in 1–2 sentences what the `group_by()` and `summarize()` syntax does in the commands above.

8. Enter the following syntax. (Note: If you have not already done so, install the **ggplot2** package prior to running these commands.)

```
library(ggplot2)
ggplot(data = p, aes(x = MonthRead, y = pages)) +
    geom_point() +
    geom_line()
```

Copy the plot into your word-processed document.

9. Read the *Axes* page of the *Cookbook for R* website (http://www.cookbook-r.com/Graphs/). Add to the syntax above to change the label on the *x*- and *y*-axis of the plot. Copy both the syntax you used, and the new plot into your word-processed document.

10. Read the *scale_x_continuous* page of the *ggplot2* documentation website (http://docs.ggplot2.org/current/). Add to the syntax you wrote for the previous question to add a break and label for each of the 12 months. Copy both the syntax you used, and the new plot into your word-processed document.