STA 3032 Homework 1
Due on September 6, 2022 at 11:59 p.m.

Instructions:

- Submit the following file to the relevant dropbox on course website.

  1. **One single pdf file** of your report showing your steps, answers, and R output if necessary. This file should be named HWx_$Last$.pdf, where x is the homework number and $Last$ is your last name (e.g., HW1_Lee.pdf).

- **No late homework will be accepted.** Make use of the dropping policy stated in the syllabus if you are unable to meet the deadline.

- In the following, WMMY refers to our textbook by Walpole, Myers, Myers, and Ye.

Assignment:

1. WMMY Exercise 1.16.
   In addition, show that
   $$\sum_{i=1}^{n}(x_i - \bar{x})^2 = \sum_{i=1}^{n} x_i^2 - n\bar{x}^2.$$

2. WMMY Exercise 1.21.
   In addition, find Q_1 and Q_3. Are there any potential outliers based on the $1.5 \times$ IQR criterion? Explain. The observations are ordered from the smallest to the largest in R as follows.

```
> sort(x)
 [1]   13   15   18   21   21   21   22   22   24   28   28
[12]   37   40   43   50   55   66   69   70   74   74   78
[23]   78   83   83   87   89   90   93   95   96   98   98
[34]  102  103  112  112  115  118  120  121  124  132  135
[45]  158
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3. WMMY Exercise 2.6.

4. WMMY Exercise 2.54.

5. WMMY Exercise 2.82.

6. WMMY Exercise 2.96.

7. WMMY Exercise 2.98.