Assignment #1 for Math 336 by Sam Shen

Due September 30, 2020/Wed, submission via BB by 11.59pm
You should upload two files when submitting your work: One pdf file that has all the written solutions, and another R code file.

Dimensional Analysis (5 problems)
#1:   Exercise 1.1
#2:   Exercise 1.6
#3:   Exercise 1.7
#4:   This is a new problem not included in the list of exercises:
Derive the formula (1.54) on Page 11 for the speed of a free fall body from Eq. (1.40) at the beginning of Sub-section 1.4.4 on Page 10. You basically repeat what was done in the book, fill in the details not included in the book, and explain each of your steps.

#5:   Exercise 1.13: The question is to find the period τ of the harmonic oscillation using an assumed model. The problem is already solved. What you need to do is to fill in more details and present a complete solution in your own way.

R Programming and Linear Models (5 problems)
#6   Exercise 2.1
#7   Exercise 2.4
#8   Exercise 2.5
#9   Exercise 2.7
#10   Exercise 2.9