Homework 3
MTH 4230, Spring 2023

Due Tuesday, Feb. 21 (originally due Friday, Feb. 17)

Chapter in Book	**Problems**
2	2.29*, 2.30, 2.31, 2.32
3	3.8 (skip part *e*)**, 3.15, 3.16 (skip part *b*)

The data are in the files **CH01PR27.txt**, **CH01PR28.txt** , **CH03PR15.txt** (below this file in Canvas).

* For Problem 2.29, Part *a*, after reading the **Muscle mass** data into R using **`read.table()`**, you can obtain the residuals $Y_i - \hat{Y}_i$ and the deviations of fitted values away from the mean $\hat{Y}_i - \overline{Y}$ by typing something like this:

```
my.reg <- lm(mass ~ age, data = my.data)
my.resids <- my.reg$residuals
my.yhatdevs <- my.reg$fitted.values – mean(my.data$mass)
```

Then you can plot them using **`plot()`**. Don't forget to use the same scales via the **`xlim`** and **`ylim`** arguments to **`plot()`**.

** In Problem 3.8 Part *d*, for the correlation test for normality of the errors, you can mimic the following R code, then use Table B.6:

```
my.reg <- lm(crime ~ diplomas)
my.pts <- qqnorm(my.reg$res)    # Makes a normal probability
                                # (or 'quantile-quantile')
                                # plot and saves the x and y
                                # coordinates of the plotted
                                # points in my.pts (a list).

cor(my.pts$x, my.pts$y)         # my.pts$x stores the ex-
                                # pected values of the or-
                                # dered  residuals under
                                # normality ('theoretical,
                                # quantiles') and my.pts$y
                                # stores the ordered re-
                                # siduals ('sample quan-
                                # tiles').
```