Homework 3
MTH 3220, Fall 2019
Due Thursday, Sept. 19

For any problems that involve computations, you must **show your work** to receive full credit.

Section in Book	Problems
8.2	19 (part *b* only), 21 (part *b* only)
9.3	36*, 45**
9.4	49, 50 (skip part *b*), 52

* For **Problem 36**, the sample mean and standard deviation of the 8 differences (unabraded minus abraded) are $\bar{d} = 7.25$ and $s_D = 11.86$.

** To check the normality assumption for **Part *a*** of **Problem 45**, look at a histogram and normal probability plot of the differences in R:

```
> diffs <- c(-31.7, -9.2, 109.9, 17.2, 40.2, 173.9, 250.6, 44.6, 27.8, 59.3,
            107.4, 159.8, 184.8, -43.8, 146.4)
> hist(diffs)              # Should be approximately bell-shaped
> qqnorm(diffs)
> qqline(diffs)            # The points should hug the straight line
```

For **Part *c*** of **Problem 45**, carry out the paired *t* test. The sample mean and standard deviation of the 16 differences are $\bar{d} = 82.5$ and $s_D = 87.4$.