

MTH 3210 Lab 1 **Answer Sheet**

Due Thu., Feb. 7

1 **Part A**

1.1 **Lighting Deaths Data Set**

1. NA
2. **Don't** print the histogram. Just describe any interesting features of the data revealed by the graph.
3. **Don't** print the boxplot. Just describe any interesting features of the data revealed by the graph.

4. How many observations are there in the data set? _____

5. How many total deaths were there over the years 1959 - 2005? _____

6. Give the values of the statistics:

Minimum = _____

Maximum = _____

7. Give the values of the statistics and answer the question:

Mean \bar{x} = _____

Median \tilde{x} = _____

Why is the value of the mean larger than that of the median? **Hint:** What effect does the outlier have on the mean? What effect does it have on the median?

8. Give the values of the statistics and answer the question:

Standard deviation $s =$ _____

Interquartile range $IQR =$ _____

What effect does the outlier have on the standard deviation? What effect does it have on the IQR?

9. Give the values of the recomputed statistics and answer the questions:

Mean $\bar{x} =$ _____

Median $\tilde{x} =$ _____

Standard deviation $s =$ _____

Interquartile range $IQR =$ _____

What effect does replacing the outlier by a more legitimate value have the values of \bar{x} and \tilde{x} ?

What effect does replacing the outlier by a more legitimate value have the values of s and IQR ?

2 Part B

2.1 Lake Tahoe and Donner Lake Temperature Data Set

1. NA
2. Give the values of the statistics:

Mean $\bar{x} =$ _____

Standard Deviation $s =$ _____

3. What would be the new values of the mean and standard deviation (if we converted to °F)?

Mean \bar{y} = -----

Standard Deviation s_y = -----

4. Write the R command(s) you used to create the °F dataset below:

5. Give the new values of the statistics (after converting to °F)?:

Mean \bar{y} = -----

Standard Deviation s_y = -----

3 Part C

3.1 Blood Coagulation Times Data Set

1. NA
2. *Don't* print the boxplots. Just use them to answer the following questions.

Which diet (A, B, C, or D) leads to the longest blood coagulation times? Which leads to the shortest coagulation times?