Roll No.:_____ **MM 217 Data Analysis and Interpretation**

(1) Consider the pair of data sets x and y shown in the table. Given the correlation coefficient r is given by the expression, $r=\frac{\sum_{i=1}^{n}(x_i-\bar{x})(y_i-\bar{y})}{\sqrt{\sum_{i=1}^{n}(x_i-\bar{x})^2\sum_{i=1}^{n}(y_i-\bar{y})^2}}$ calculate r for this data set. Comment on your result.

x	y
1.97	-36.49
4.32	-63.37
4.60	-65.06
4.91	-66.61
5.88	-68.97
6.30	-68.83
6.47	-68.56
6.92	-67.32
8.32	-58.19
9.00	-51.06
9.79	-40.24

(2) A total of 100 people work at company A, whereas a total of 110 work at company B. Suppose the total employee payroll is larger at company A than at company B. (a) What does this imply about the median of the salaries at company A with regard to the median of the salaries at company B? (b) What does this imply about the average of the salaries at company A with regard to the average of the salaries at company B?

(3) A recent study yielded a positive correlation between breast-fed babies and scores on a vocabulary test taken at 6. Discuss the potential difficulties in interpreting the results of this study.