Due September 22, 2010, at the **beginning of section**

Mark the following statements as True or False, and give a **brief** (about one line, not a paragraph) explanation. Each problem will be graded out of 2 points.

1. If the students in a certain Stat 2 course have their midterm score equal to their height plus ten (so, if their height is 69 inches, their exam score will be 79), then the correlation between their scores and their height will be 1.

2. A study on middle and elementary school students found a negative correlation between the average daily amount of soda they drank, and their scores on math aptitude tests. Therefore, we can conclude that drinking soda hampers your mathematical ability.

3. In countries with a higher fat intake in their diet, higher rates of breast cancer have been observed. This implies that individuals with a higher fat intake in their diet are at greater risk for developing breast cancer.

4. If the correlation coefficient $r = .8$, this means that 80% of the points in the scatterplot are tightly clustered around the SD line.

5. If y is always bigger than x, then the two variables will be negatively correlated.

6. If the correlation between x and y is r, then the correlation between $10x + 6$ and y will also be r.

7. If the correlation between x and y is r, then the correlation between x and $-y$ is also r.

8. The SD line must go through both the point of averages and the origin.

9. The slope of the SD line is always 1.

10. A GSI gives a quiz with 10 problems, and grades them, writing down for each student the number of correct answers and the number of wrong answers (no partial credit). The average number of correct answers is 5.6 with an SD of 2, and the average number of wrong answers is 4.4 with an SD of 2. The correlation between the number of right answers and the number of wrong answers must be **1**.