Quiz 3 (Individual) for Statistics 113
Statistics and Society–Fall 2000
Material Covered: Chapter 10 of Workbook and text
For: Wednesday, 4th October

Name (please print): _____.
last first

Consider the following results in a study of around 1,000 families:

average height, husband, $x \approx 68$ inches	SD ≈ 2.7
average height, wife, $y \approx 63$ inches	SD ≈ 2.5 $r \approx 0.25$

Notice that the husband's height would be given along the x axis of a scatter plot and the wife's height would be given along the y axis.

(a) [1] The point of averages is
(circle closest one) **(2.7, 68)** / **(2.5, 63)** / **(2.5, 2.7)** / **(63, 68)** / **(68, 63)**.

(b) [1] The slope of the regression line is (circle closest one)
1.08 / **0.93** / **0.66** / **0.27** / **0.23**.

(c) [1] Predict the height of the wife when the height of her husband is 65 inches.
(Circle closest one) **60.4** / **60.9** / **61.3** / **61.8** / **62.3**.

(e) [1] The slope of the SD line is (circle closest one)
1.08 / **0.93** / **0.66** / **0.27** / **0.23**.

(e) [1] The slope of the SD line is (circle none, one or more)

(i) shallower than the slope of the regression line used to predict husband's height from wife's height.

(ii) shallower than the slope of the regression line used to predict wife's height from husband's height.

(iii) between the slope of the regression line used to predict husband's height from wife's height and the slope used to predict wife's height from husband's height.

(iv) steeper than the slope of the regression line used to predict husband's height from wife's height.

(v) steeper than the slope of the regression line used to predict wife's height from husband's height.

(a) **(68, 63)**.

(b) **0.23**. ($0.25 \times \frac{2.5}{2.7}$)

(c) **62.3**. ($65 - 68 = -3$, $\frac{-3}{2.7} \approx -1.11$, $-1.11(0.25) \approx -2.8$, $-2.8(2.5) \approx -0.7$, $-0.7 + 63 \approx 62.3$)

(d) **0.93**. (SD line will always be $\frac{2.5}{2.7}$, whatever regression line used; SD line depends on what is x and what is y)

(e) (i), (iii), (iv).