Name _____ **Date** _____

Elementary Statistics **HW 10.3 part 1**

1. If we use the paired height/pulse data for females from Data Set 1 in Appendix B, we get this regression equation: $\hat{y} = 0.0223x + 73.9$ where x represents the height in cm and y is the pulse rate in beats per minute.

   a. What does the symbol $\hat{y}$ represent?

   b. What does the predictor (independent) variable represent?

   c. What does the response (dependent) variable represent?

2. What is the difference between the following regression equations? $\hat{y} = b_1x + b_0$ $y = \beta_1x + \beta_0$

3. What is a linear regression equation? Why is it found?

4. Use the following data to answer the questions that follow:

X	10	8	13	9	11	14	6	4	12	7	5
y	9.14	8.14	8.74	8.77	9.26	8.10	6.13	3.10	9.13	7.26	4.74

   a. Sketch the scatterplot from the calculator in the box on the right:

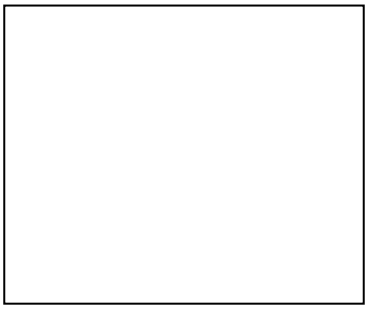
   b. Find the equation of the regression line.

   c. Identify a characteristic of the data that is ignored by the regression line.

5. Use the following data to answer the questions that follow:

X	10	8	13	9	11	14	6	4	12	7	5
y	7.46	6.77	12.74	7.11	7.81	8.84	6.08	5.39	8.15	6.42	5.73

a. Sketch the scatterplot from the calculator in the box on the right:



b. Find the equation of the regression line.

c. Identify a characteristic of the data that is ignored by the regression line.