Introduction to Econometrics
Fall 2007
Assignment 2

Today’s Date: 9/17
Due Date: 9/24

Please show all of your work and clearly indicate your final response to each question.

1. W 2.2
2. W 2.3
3. W 2.5
4. W 2.9
5. You are interested in estimating the bivariate regression model

\[ y = \beta_0 + \beta_1 x + \varepsilon, \]  

where it is assumed that \( E(\varepsilon) = 0, E(\varepsilon|x) = 0, \) and \( E(\varepsilon^2|x) = \sigma^2 \) in the population. From a random sample of 100 observations, you are given the following information.

1. \[ \sum_{i=1}^{100} y_i = 246 \]
2. \[ \sum_{i=1}^{100} x_i = 583 \]
3. \[ \sum_{i=1}^{100} x_i y_i = -148 \]
4. \[ \sum_{i=1}^{100} x_i^2 = 3809 \]

Is this information sufficient to obtain the OLS estimates of \( \beta_0 \) and \( \beta_1 \)? If so, compute their values. Is it sufficient to compute an unbiased estimate of \( \sigma^2 \)? If so, compute its value. If not, explain what other information you would need.