

Name _____ Surname _____ Student ID. _____

DUE DATE : Thursday 5st, November 2015.

Assignment 5

1. Consider the regression model:

$$y_i = \beta_1 + \beta_2 x_i + u_i$$

where $y_i = (Y_i - \bar{Y})$ and $x_i = (X_i - \bar{X})$. In this case, the regression line must pass through the origin. True or False? Show your calculations.

2. Consider the following models:

$$\ln Y_i^* = \alpha_1 + \alpha_2 \ln X_i^* + u_i^*$$

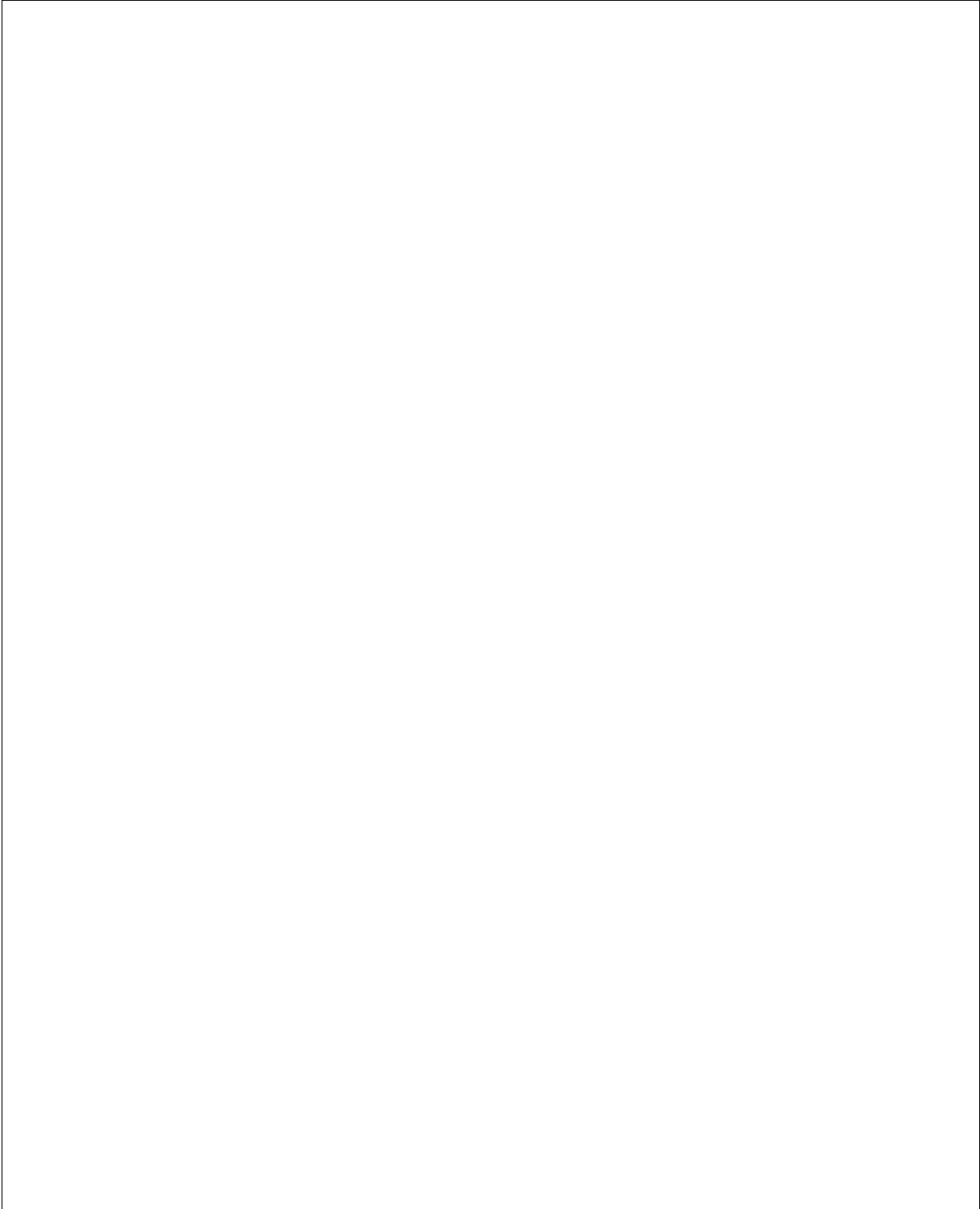
$$\ln Y_i = \beta_1 + \beta_2 \ln X_i + u_i$$

where $Y_i^* = w_1 Y_i$ and $X_i^* = w_2 X_i$ the w 's being constants.

a. Establish the relationships between the two sets of regression coefficients and their standard errors.

b. Is the r^2 different between the two models?





3. Consider the data in the following table:

Y	X_2	X_3
1	1	2
3	2	1
8	3	-3

Based on these data, estimate the following regressions:

$$Y_i = \alpha_1 + \alpha_2 X_{2i} + u_{1i}$$

$$Y_i = \gamma_1 + \gamma_3 X_{3i} + u_{2i}$$

$$Y_i = \beta_1 + \beta_2 X_{2i} + \beta_3 X_{3i} + u_i$$

Note: Estimate only the coefficients and not the standard errors.

a. Is $\alpha_2 = \beta_2$? Why or why not?

b. Is $\gamma_3 = \beta_3$? Why or why not?

What important conclusion do you draw from this exercise?

