

Name _____ Surname _____ Student ID. _____

DUE DATE : Thursday 1st, October 2015.

Assignment 4

1. From a sample of 10 observations, the following results were obtained:

$$\sum Y_i = 1110 \quad \sum X_i = 1700 \quad \sum X_i Y_i = 205,500$$

$$\sum X_i^2 = 322,000 \quad \sum Y_i^2 = 132,100$$

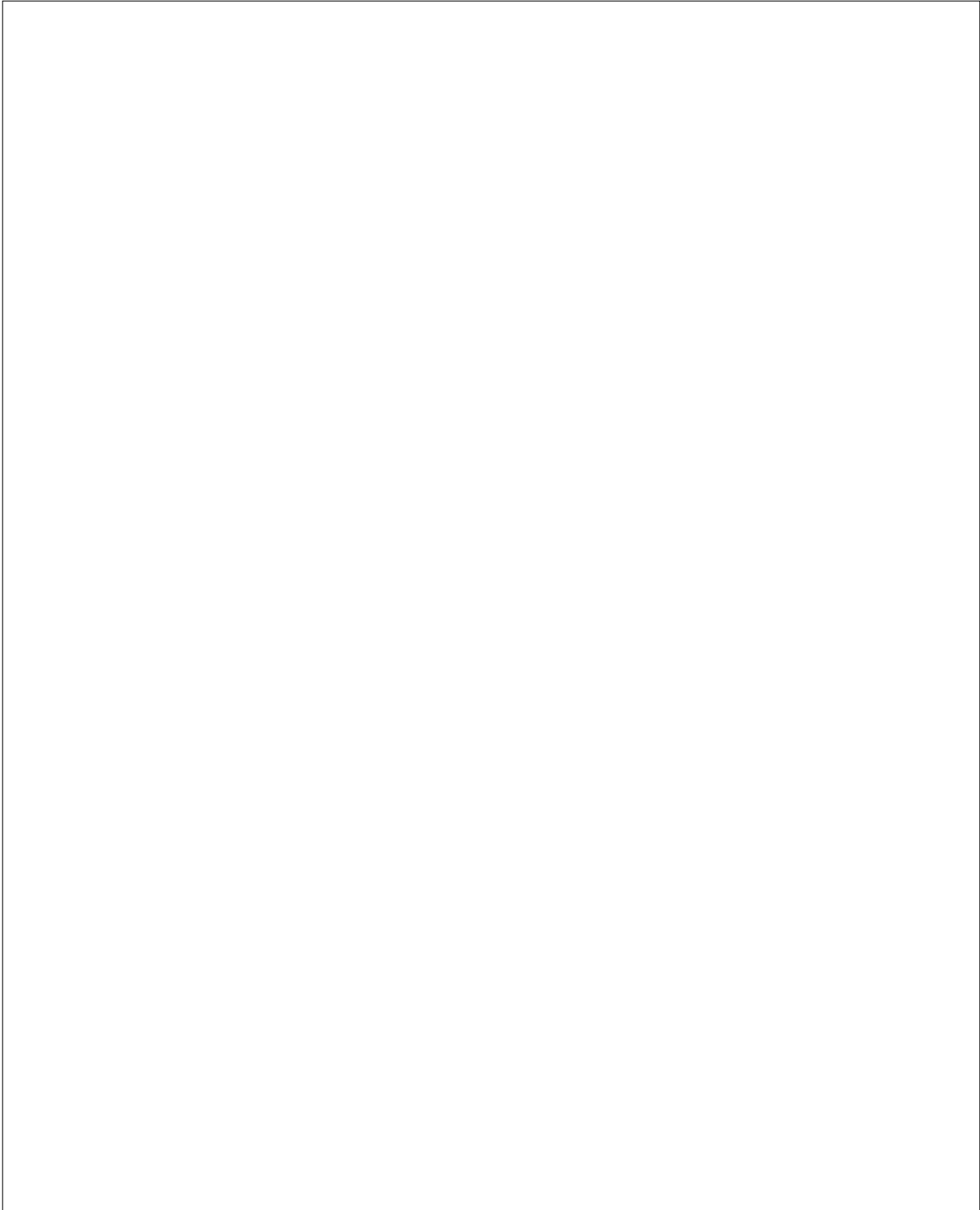
with the coefficient of correlation $r=0.9758$. But on rechecking these calculations it was found that two pairs of observations were recorded:

Y	X
90	120
140	220

instead of

Y	X
80	115
150	230

What will be the effect of this error on r ? Using the new data to correct r .



2. The data file: HW4.XLSX in B.E moodle gives data on gross domestic product (GDP) for the United States for the years 1959-1997.

a. Use STATA program to plot the GDP data in current and constant (i.e., 1992) dollars against time.

b. Letting Y denote GDP and X time (measured chronologically starting with 1 for 1959, 2 for 1960, through 39 for 1997), see if the following model fits the GDP data:

$$Y_t = \beta_1 + \beta_2 X_t + u_t$$

Use STATA program to estimate this model for both current and constant-dollar GDP.

c. How would you interpret β_1 , β_2 , r^2

d. If there is a difference between β_2 estimated for current-dollar GDP and that estimated for constant-dollar GDP, what explains the difference?

(Please print your output from STATA and submit it with your HW4)