

University of Guam
School of Business and Public Administration
PA305 DATA ANALYSIS IN PUBLIC ADMINISTRATION
SPRING 2012
Homework Assignment #2

Submit your homework through email at nli.guam@gmail.com in Microsoft Word format by Thursday **May 3, 2012**. Use “PA305 Homework2” as the email subject.

Problem 1. Economists believe that there exists a linear relationship between income and personal consumption. Shown below are 10 observations on annual levels of consumption and income in the United States.

<i>Year</i>	<i>Income (\$Billions)</i>	<i>Consumption (\$Billions)</i>
1950	284.8	191.0
1951	328.4	206.3
1952	345.5	216.7
1953	364.6	230.0
1954	364.8	236.5
1955	398.0	254.4
1956	419.2	266.7
1957	441.1	281.4
1958	447.3	290.1
1959	483.7	311.2

- Construct a scatter diagram for the data.
- Compute the regression model (Treat consumption as dependent variable).
- Test to determine whether there is enough evidence to infer that there is a linear relationship between income and consumption. Use a 5% significance level.

Problem 2. A sales manager for an advertising agency believes there is a relationship between the number of contacts and the amount of the sales. To verify this belief, the following data was collected:

<u>Salesperson</u>	<u>Number of Contacts</u>	<u>Sales (in thousands)</u>
1	14	24
2	12	14
3	20	28
4	16	30
5	46	80
6	23	30
7	48	90
8	50	85
9	55	120
10	50	110

- What is the dependent variable? What is the independent variable?
- What is the value of the coefficient of correlation?
- What is the regression equation?