KFUPM | Term 111 | Date: 24/10/2011
Mathematics & Statistics | STAT 319 | Duration: 30 minutes
Quiz# 1&2
Name: ID #: Section 6 Serial #:

Q1. The following are data on the drying time of a certain varnish and the amount of an additive that is intended to reduce the drying time:

Amount of varnish additive (grams) x	0	1	2	3	4	5	6	7	8
Drying time (hours) y	12.0	10.5	10.0	8.0	7.0	8.0	7.5	8.5	9.0

$\Sigma y = 80.5$, $\Sigma y^2 = 740.75$, $\Sigma x = 36$, $\Sigma x^2 = 204$ and $\Sigma x\, y = 299$, $S_{xy} = -23$

a. Calculate the least square estimates of the slope and intercept of a simple linear regression model.

b. What change in drying time would be expected for one gram change in varnish additive?

P.T.O. →

c. Calculate the coefficient of correlation and interpret its value.

d. Calculate the coefficient of variation for the drying time and interpret your result.

e. Construct a box plot for the drying times and comment on it shape.

P.T.O. →

Q2. In a certain residential area 60% of all households subscribe to the national newspaper, 80% subscribe to the afternoon paper and 50% of all households subscribe to both papers. If a household is selected at random, what is the probability that it subscribes to

a. At least one of the two newspapers.

b. Exactly one of the two newspapers.

Q3. Suppose that of all individuals buying a certain personal computer, 60% include a word processing program in their purchase, 40% include a spreadsheet program, and 30% include both types of programs. Consider randomly selecting a purchaser and let A = (word processing program included) and B = (spreadsheet program included).

a. Find the probability that a word processing program was included given that the selected individual included a spreadsheet program.

P.T.O. →

b. Find the probability that a spreadsheet program was included given that the selected individual included a word processing program.

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