Second Exam

Write all answers in your blue book and show all work there. Return your exam and printout(s) in your blue book.

17 pts.

Q_D	P_{OWN}	P_{SUB}
1	5	2
2	4	3
3	2	5

a) Find by hand (show work) the regression equation where Q_D is a function of P_{OWN} .

b) Find the standard error of the estimate and use it to construct a 90% confidence interval for $\mu_{y.x}$, where $P_{OWN} = 11/3$.

c) Find the standard error of the estimate and use it to for the significance of P_{OWN}. $\alpha = .1$.

d) Find r^2 and interpret it.

e) Are there sufficient degrees of freedom to add P_{SUB} to the model? Explain.

17 pts.

2) Use the following information to set up normal equations and solve for a and b.

$$\Sigma Y=10, \Sigma X=12, \Sigma XY=20, \Sigma X^2=40, n=4$$

20 pts. **Computer Problem**

3) Open StkData in the Chap. 16 Stat2216 files folder. Run a regression with P/Eratio as the dependent variable and Gross Profit Margin and a dummy variable (that you make) for industry equals 2 as the independent variables. Take care to read through the following parts, so that you'll have all that you need.

a) Determination which, if any, of the variables are statistically significant ($\alpha=.05$) and

b) Reconcile your finding in a) with the AOV that you see.

c) How much higher(lower) is the P/E ratio due to being in industry 2?

d) Check for influential observations.

e) Check for 2 econometric problems (your choice) that seem relatively likely to occur in this model.

16 pts

4) Draw well-labeled sketch of each of the following regression equations.

a) $Y = 10 - 2X + 5\text{Dummy}$

b) $Y = 10 - 2X + .1X^2$

c) $\log_{10}Y = 1 + .03X$

I have neither given nor received unfair aid on this test nor am I aware of anyone else who has.

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