Fox Module 18: Outliers and influence, advanced

(The attached PDF file has better formatting.)

Homework assignment: studentized residuals

A data sample has five points.

explanatory variable	1	2	3	4	5
response variable	1	3	2	3	0

A. Regress the response variable on the explanatory variable. What is the residual at the last point (5,0)?
B. Regress the first four response variables on the first four explanatory variables. What is the studentized residual at the last point (5,0)?
C. Explain intuitively why the residual is correlated with the response variable.
D. Is the studentized residual correlated with the response variable? Why or why not?