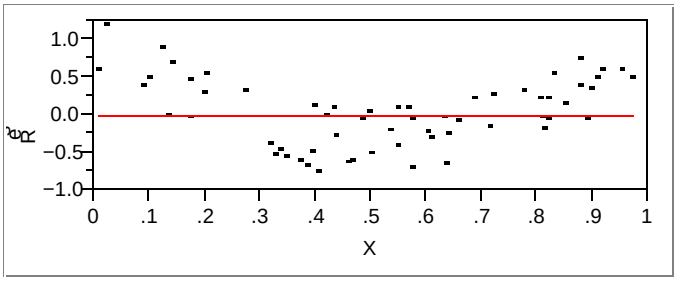
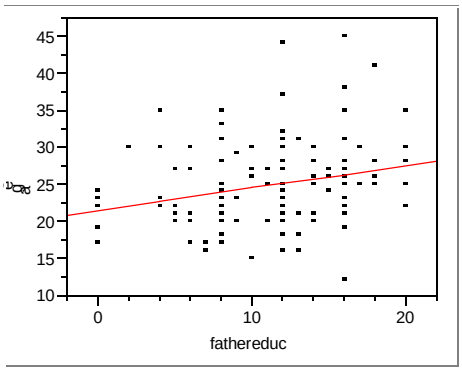
6) Circle all of the following that are true.
   a) Correlational (observational) studies are particularly well suited for establishing causal relationships.
   b) Correlations of averages have to be interpreted carefully because they tend to overstate the true strength of the relationship between X and Y.
   c) According to the Central Limit Theorem, the distribution of sample means will be normally distributed no matter the shape of the parent population and no matter the sample size.

7) Below is a residual plot for a regression analysis. Based on this plot does it appear that the regression analysis is appropriate? YES NO Why or why not?



8) What statistical technique would be most appropriate to compare the average income of students across the four North Carolina ACC schools, based on random samples of students from each of those schools?

_____



agefirstkid = 21.52 + 0.308 fathereduc

RSquare	0.061529
Root Mean Square Error	_____
Mean of Response	25.032
Observations (or Sum Wgts)	125

Parameter Estimates

Term	Estimate	Std Error	t Ratio	Prob>|t|
Intercept	21.519752	1.333277	16.14	<.0001
fathereduc	0.3076601	0.10834	2.84	0.0053

a) The Root Mean Square Error is left blank. Circle a reasonable estimate of this value.
   i) 5.57
   ii) 1.27
   iii) 24.63
   iv) 321.46

b) Calculate the predicted age the respondent first had a child, if the respondent's father had 14 years of education.

c) Which of the following is a correct interpretation of R^2?
   i) Approximately 6% of the time, the age of first child is explained by the father's years of education.
   ii) Approximately 6% of the variability in age of first child is accounted for by father's years of education.
   iii) The real correlation between age of first child and father's years of education is .061529.
   iv) Approximately .36% (.36% = 6%*6%) of the variability in age of first child is accounted for by father's years of education.

d) In this sample of 125 respondents there is a relationship between fathers' education and age of first child. What number given in the output tells you the probability of the observed relationship (or more extreme) if there was no relationship between the two variables in the population? _____