13. (12 points) Answer True or false. If False explain why the statement is <u>False</u>.

b) Residual plots can be used to check the assumptions of regression models. _____

11. A 95% Confidence Interval for $\beta_1$ in a simple linear model was computed to be $(-2.0, -0.5)$. Circle those statements which <u>must</u> be True.

a. The test $H_0: \beta_1 = 0$ was rejected at the $\alpha = 0.05$ level.

b. $\beta_1 \neq 0$

10. (5 points) Recall the following information that was used to derive the Bonferroni adjustment.

$$P(\overline{A \cup B}) = 1 - P(A \cup B) = 1 - P(A) - P(B) + P(A \cap B) \geq 1 - P(A) - P(B)$$

Suppose $P(A) = 1/6$ $P(B) = 1/4$

Then $P(\bar{A} \cap \bar{B}) \geq$ _____ $\geq 0$ (fill in the blank)

6. (6 points) Given the results below:
a) State the hypothesis about the regression coefficients that can be tested.
b) Provide the test statistic for the hypothesis being tested.

Analysis of Variance Table

Note: RSS = Residual Sum of Squares = SSERROR

Model 1: Species ~ 1
Model 2: Species ~ Area + Elevation + Nearest + Scruz + Adjacent

| | Res.Df | RSS |
|---|---|---|
| 1 | 29 | 381081 |
| 2 | 24 | 89231 |

a) _____

b) _____

(11)

(10pts) Given the scatter plot to the right. Circle those statements that are true.

(i) Point 1 has greater influence than Point 2

(ii) Point 1 has leverage