**STUDY QUESTIONS**

1. In multiple regression, an \_\_\_\_\_\_\_ statistic is used to test for the overall effectiveness of the model.

2. The significance of individual regression coefficients in a multiple regression model is tested using a \_\_\_\_\_\_ ratio.

3. The value, *s*e, represents the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

4. The coefficient of multiple determination is denoted by \_\_\_\_\_\_.

5. Residuals can sometimes be used to locate \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or values that are apart from the mainstream of the data.

6. Because *R*2 may sometimes yield an inflated figure, statisticians have developed a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to take into consideration both the additional information of each new independent variable and the changed degrees of freedom.

7. Examine the computer output below taken from a multiple regression analysis with three independent variables.

The regression equation is:  = 28.4 + 1.30 *x*1 - 0.25 *x*2 + 2.20 *x*3

Predictor Coef Stdev *t*-ratio *p*

Constant 28.410 56.520 0.50 0.631

*x*1 1.295 2.052 0.63 0.548

*x*2 -0.247 1.816 -0.14 0.895

*x*3 2.202 .028 0.73 0.491

*s*e = 32.68 *R*2 = 8.1% *R*2 (adj) = 0.0%

Analysis of Variance

Source df SS MS *F p*

Regression 3 659 220 0.21 0.889

Error 7 7474 1068

Total 10 8134

The overall test of significance yields \_\_\_\_\_\_\_\_\_\_\_\_\_\_. This test is (is

not) significant \_\_\_\_\_\_\_. The coefficient of multiple

determination is \_\_\_\_\_\_\_\_\_\_\_\_\_\_. The standard error of the estimate is

\_\_\_\_\_\_\_\_\_\_\_\_\_\_. The *t*-ratios and their associated probabilities indicate

that \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are significant predictor variables. The

regression coefficient of the *x*3 variable is \_\_\_\_\_\_\_\_\_\_\_\_\_. The value of

the adjusted *R*2 is \_\_\_\_\_\_\_\_\_\_\_\_\_\_. This indicates

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**ANSWERS TO STUDY QUESTIONS**

1. *F*

2. *t*

3. Standard Error of the Estimate

4. *R*2

5. Outliers

6. Adjusted *R*2

7. *F* = 0.21 with *p* = .889, not, .081, 32.68, None of the

Independent Variables, 2.202, .000, There is Virtually No

Predictability in this Model