1. Given the linear correlation coefficient r and the sample size n, determine the critical values of r and use your finding to state whether or not the given r represents a significant linear correlation. Use a significance level of .05.

R = -0.8444, n=5

1. Critical values: r =$\pm $ 0.950, no significant linear correlation
2. Critical values: r =$\pm $ 0.878, significant linear correlation
3. Critical values: r =$\pm $ 0.878, no significant linear correlation
4. Critical values: r =$\pm $ 0.950, significant linear correlation
5. Find the value of the linear correlation coefficient r.

The paired data below consist of the test scores of 6 randomly selected students and the number of hours they studied for the test

Hours 5 10 4 6 10 9

Score 64 86 69 86 59 87

1. .224
2. -.224
3. -.678
4. .678

*3.Use the given data to find the best predicted value of the response variable*

*Eight pairs of data yield r= .708 and the regression equation y = 55.8 = 2.79x Also y= 71.12, what is the best predicted value of y for x = 5.7?*

*a.71.13*

*b.71.7*

*c.320.85*

*d. 57.80*

*4. Use the given data to find the equation of the regression line. Round the final values to three significant digits, if necessary*

*X 0 3 4 5 12*

*Y 8 2 6 9 12*

*a. Y= 4.98 + .725x*

*b. Y= 4.88 + .525x*

*c. Y= 4.88 + .625x*

*d. Y= 4.98 + .425x*

*5. Given below are the analyses of variance results. Assume you want to use a .05 signifiance level in testing the null hypothesis that the difference samples come from populations with the same mean.*

*Identify the value of the test statistic*

*Score DF SS MS F P*

*Factor 3 13.500 4,500 5.17 .011*

*Error 16 13.925 .870*

*Total 19 27.425*

1. *.11*
2. *13.500*
3. *5.17*
4. *4.500*

*6. What can you conclude about the equality of the population mean*

*Score DF SS MS F P*

*Factor 3 30 10 1.6 .264*

*Error 8 50 6.25*

*Total 11 80*

1. *Reject the null hypothesis since p-value is greater than significant level*
2. *Accept the null hypothesis since p-value is greater than significant level*
3. *Accept the null hypothesis since p-value is less than significant level*
4. *Reject the null hypothesis since p-value is less than significant level*

7. Test the claim that the samples come from populations with the same mean. Assume populations are normal distribution with same variance

Exercise 1 Exercise 2 Exercise 3

2.5 5.8 4.3

8.8 4.9 6.2

7.3 1.1 5.8

9.8 7.8 8.1

5.1 1.2 7.9

At the 1% significant level does it appear that a difference exists in the true mean weight loss produced by the three exercise programs?

8. Use the given information to find the coefficient of determination

A regression equation is obtained for a collection of paired data. It is found that the total variation is 29.045, the explained variation is 15.212, and the unexplained variation is 13.833. Find the coefficient of determination.

1. .476
2. .909
3. .524
4. 1.909

9. Is the data point, P, an outlier, an influential point, both or neither?

The regression equation for a set of paired data is y= 7 + 5x. The correlation coefficient for the data is .88. A new point P(15, 94), is added to the set

10. At the .025 significance level, test the claim that the three brands have the same mean if the following sample results have been obtained

Brand A Brand B Brand C

32 27 22

34 24 25

37 33 32

33 30 22

36 21

39

11. Provide an appropriate response

At the same time each day, a researcher records the temperature in each of three greenhouses. The table shows the temperatures in degrees Fahrenheit recorded for one week

Greenhouse 1 Greenhouse 2 Greenhouse 3

73 71 67

72 69 63

73 72 62

66 72 61

68 65 60

71 73 62

72 71 59

Use a .05 significance level to test the claim that the average temperature is the same in each greenhouse.

How is the analysis of variance results affected if the same constant is added to every one of the original sample values?