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| **1.**A data set with 7 observations yielded the following. Use the simple linear regression model.  Greek letter Capital Sigma X =21.57  Greek letter Capital Sigma X2   =68.31  Greek letter Capital SigmaY =188.9   Greek letter Capital Sigma Y2   =5,140.23 Greek letter Capital Sigma XY   =590.83  Calculate the Correlation coefficient, Coefficient of determination and SSE, and the Standard Error of Estimate. |

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| **2.**A set of final examination grades in a calculus course was found to be normally distributed with a mean of 77.2 and standard deviation of 5.  Only 2.5% of the students taking the test scored higher than what grade? |

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| **3.**An apple juice producer buys all his apples from a conglomerate of apple growers in one northwest state. The amount of juice squeezed from each of these apples is approximately normally distributed with a mean of 2.3 ounces and a standard deviation of 0.15 ounce.  Between what two values (in ounces) symmetrically distributed around the population mean will 90% of the apples fall? |

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| **4.**Consider the following partial computer output for a multiple regression model. Predictor          Coefficient         Standard Deviation  Constant               41.225                  6.380 X1                         1.081                  1.353 X2                      -18.404                  4.547  Analysis of Variance Source                   DF                      SS Regression              2                       2270.11 Error                     26                      3585.75 What is the number of Observations in the sample? Write the least squares regression (prediction) equation. Test the usefulness of variable x2 in the model at alpha =.05. Calculate the t statistic and state your conclusions.(Ch 14) |

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| **5.**A small town has a population of 20,000 people.  Among these 2,000 regularly visit a popular local bar. A sample of 225 people who visit the bar is surveyed for their annual expenditures in the bar. It is found that on average each person who regularly visits the bar spends about $2500 per year in the bar with a standard deviation of $450. Construct a 99 percent confidence interval around the mean annual expenditure in the bar. |

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| **6.**A data set with 7 observations yielded the following. Use the simple linear regression model.  Greek letter Capital Sigma X =21.57 Greek letter Capital Sigma X2   =68.31  Greek letter Capital SigmaY =188.9  Greek letter Capital Sigma Y2   =5,140.23 Greek letter Capital Sigma XY   =590.83 Write the Regression Equation showing Intercept and slope and test the significance of slope at 1% significance level. |

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| **7.**Test *H*0*: pi*1*– pi*2 .01, *H*A*: pi*1*– pi*2> .01 at **=0.05 and 0.10 where p1=.08, p2=.035, n1 = 200, n2 = 400. Indicate which test you are performing; show the test statistic and the critical values and mention whether one-tailed or two-tailed.  Note that pi stands for the Greek letter representing population proportion. |

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| **8.**A human resource manager is interested in whether absences occur during the week with equal frequency. The manager took a random sample of 100 absences and created the following table:  Monday         28 Tuesday         20 Wednesday    12 Thursday        18 Friday             22  At a significance level of alpha = .05 test the Null that the probabilities of absences are the same for all five days. |

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| **9.**Test H0: mu=42 versus HA: mu is not equal to 42 when  X-bar = 42.6, s=1.2 and n=16 at =.01  and .05. Assume that the population from which the sample is selected is normally distributed. Indicate which test you are performing; show the test statistic and the critical values and mention whether one-tailed or two-tailed.(Ch 9) (Note mu is the Greek letter for Mean) |

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| **10.**The weight of a product is normally distributed with a standard deviation of .5 ounces. What should the average weight be if the production manager wants no more than 10% of the products to weigh more than 6 ounces? |