Solutions for Problems in Powerpoint Slides Session 6-8

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| 1. | A survey found that the average hotel room rate in New Orleans is $88.42 and theaverage room rate in Phoenix is $80.61. Assume that the data were obtained from two samples of 50 hotels each and that the standard deviations of the populations are $5.62 and $4.83, respectively. At α=0.05, can it be concluded that there is a significant difference in the rates? |
| 2. | The mean noise level of 20 areas designated as “casualty doors” was 63.1 dBA, and the standard deviation is 4.1 dBA. The mean noise level for 24 areas designated as operating theaters was 56.3 dBA, and the standard deviation was 7.5 dBA. At = 0.05, can it be concluded that there is a difference in the means? |
| 3. | As an aid for improving students’ study habits, nine students were randomlyselected to attend a seminar on the importance of education in life. The table shows the number of hour for each student studied per week before and after the seminar. At = 0.10, did attending the seminar increase the number of hours the students studied per week? |
| 4. | In a sample of 80 Americans, 44 wished that they were rich. In a sample of 90 Europeans, 41 wished that they were rich. At =0.01, is there a difference in the proportions? Find the 99% confidence interval for the difference of the two proportions.      Note :    *Using python*  conf\_int= stats.norm.interval(0.99, loc=p1-p2 , scale=p\*q\*np.sqrt((1/n1)+(1/n2))) |
| 5. | Americans appear to be eating healthier. Between 1970 and 2007 the per capitaconsumption of broccoli increased 1000% from 0.5 to 5.5 pounds. A nutritionist followed a group of people randomly assigned to one of three groups and notedtheir monthly broccoli intake (in pounds). At α =0.05 is there a difference in means? |
| 6. | A psychologist wants to study whether the happiness quotient of children in the house is related to the family income. He collects data of 1300 children is there enough evidence to claim that they are related.        d.f.= (2-1)(3-1) ; C.V.=5.99 for α =0.05, chi2 = 9.37 ; Reject H0  There is enough evidence to conclude that Happiness Quotient  Is dependent on family income. |
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