**Example Quiz Questions**

***Single population Hypothesis Testing using the service-learning data***

1. The following frequency distribution summarizes the distribution of client ages accepted into the residential independent living program.

a. Do the data support that more than ¾ of accepted clients are 16 and 17 years old? Please show all your work including the null and alternative hypotheses, test statistic and proper use of the Z or t tables. Please state your conclusion in terms of the data and the question being asked. Use a significance level of 0.05. (8 points)



b. Verify that the conditions of sample size holds for using the normal distribution to make your inference. (2 points)

2. One might assume that clients who leave the program with a negative outcome might have a shorter mean length of stay.

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| --- | --- |
|  | **LOS (Days)** |
| ***One Variable Summary*** | **Negative outcome** |
| **Mean** | 192.03 |
| **Std. Dev.** | 147.91 |
| **Median** | 150.00 |
| **Minimum** | 7.00 |
| **Maximum** | 729.00 |
| **Count** | 80 |
| **1st Quartile** | 77.00 |
| **3rd Quartile** | 270.00 |

a. If we can use the overall mean LOS of 215 days as indicative of an accepted LOS average, do the data extracted from only those that ran away or were given a 30-day notice above suggest that the mean length of stay is shorter than 215 days? Please show all your work including the null and alternative hypotheses, test statistic and proper use of the Z or t tables. Please state your conclusion in terms of the data and the question being asked. Use a significance level of 0.05. (8 points)

b. Clearly the distribution of length of stay is skewed. (2 points each)

1. What information from the descriptive statistics above indicates that the distribution is not bell-shaped?
2. Is the distribution skewed right or skewed left?
3. Given the distribution is skewed, what condition allows you to use Normal sampling theory to make an inference about the mean length of stay for these clients?