**Review Sheet Appendix**
**Soci 102, Dr. Lee**

**Some lucky 13 questions derived from previous exams…**

1. If you were charged with presenting the data in the frequency distribution at the end of this exam in a graphical format (such as pie chart, bar graph, histogram, frequency polygon, or box plot) which would you choose and why? Also, sketch out what that graph would look like—you will **not** be graded on precision. In addition, calculate the mean, median, standard deviation and range of the variable. Given all the manipulations above, what do these data tell you about the sample from which they came? Finally, explain what effects the outlier is having on these descriptive statistics.

**Data Table:** Number of days since last kiss among statistics students (*n*=25)

| Value | Frequency | Percentage | Cumulative Percentage |
|---|---|---|---|
| 1 | 5 | 20 | 20 |
| 2 | 3 | 12 | 32 |
| 3 | 1 | 4 | 36 |
| 4 | 2 | 8 | 44 |
| 5 | 2 | 8 | 52 |
| 6 | 1 | 4 | 56 |
| 8 | 2 | 8 | 64 |
| 10 | 3 | 12 | 76 |
| 15 | 2 | 8 | 84 |
| 20 | 1 | 4 | 88 |
| 30 | 1 | 4 | 92 |
| 55 | 1 | 4 | 96 |
| 217 | 1 | 4 | 100 |

2. A sample of 2,500 has a mean education level of 13 years with a standard deviation of 2 years. Create a 95% confidence interval to estimate the range of the likely average education in the population. Explain what this tells us about the population's education level?

Use the following formula to answer 3 – 5.
The values entered in the formula for a sample's standard deviation were:

$$\text{s.d.} = \sqrt{\frac{(4-6)^2 + (7-6)^2 + (2-6)^2 + \ldots + (6-6)^2}{54}}$$

3. What is sample mean?

4. What is the sample size?

5. What is the value for the last case in the dataset?

6. We have a population whose standard deviation for number of roaming minutes on their cell phones is 40. If one took a sample of 100 to measure roaming minutes, the standard error of the sampling distribution would be _____.

7. The area in a normal curve that falls above the z-score, 1.56, is (check Appendix A at end of the review sheet)

Use the following scenario for questions 8 – 10. A student took the SAT and scored **1000**. The SAT scores are normally distributed, with mean **900** and standard deviation of **250**. The ACT scores are normally distributed, with mean **23** and standard deviation of **3**.

8. The corresponding z score for the student's SAT score is:

9. The proportion of persons who scored better than the student is:

10. Given the score the student made on the SAT, what would her equivalent score on the ACT be?

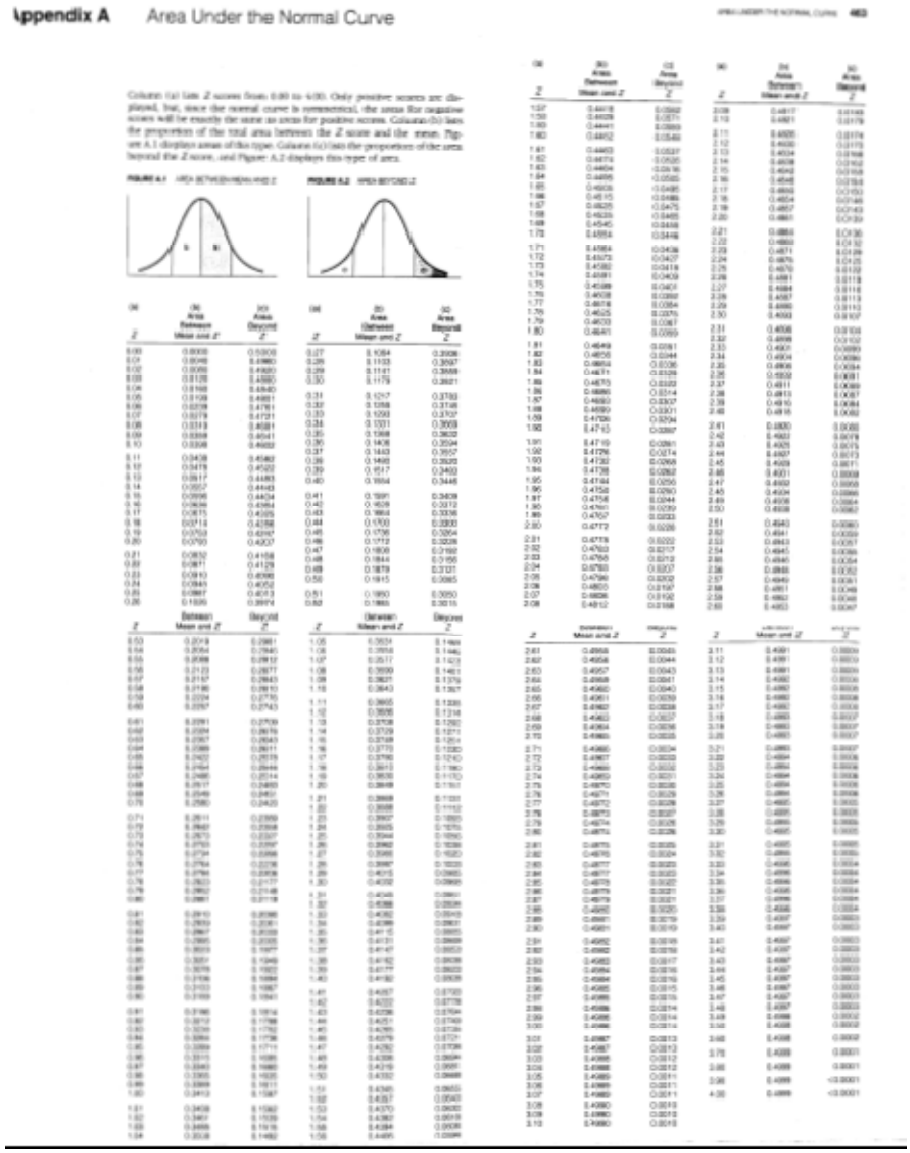
11. The median value in the following stem and leaf plot is:

0 | 11125569
1 | 01112379999
2 | 778889
3 | 3356

12. The modal value in the stem and leaf plot is:

13. In a sample of 100, the lowest value of the variable, IMACUTEE, is 45, and the highest value is 90. The range of IMACUTEE is:

**z-table that will be used on the exam…**



Appendix A Area Under the Normal Curve