College Prep Stats Chapter 7 Review

1. **In simple random sample of a survey of 3,426 people, 72% said that they voted in a recent presidential election. Find the margin of error E that corresponds to the given statistics and a confidence level of 95%.**

2. **A simple random sample of the weight of 45 eggs found an average value of 2.06 oz. The population standard deviation of the weights of all eggs is 0.38oz. Find the margin of error that corresponds to the given statistics and a confidence level of 95%.**

3. **A simple random sample of fourteen chicken eggs were tested and found that the data fit a normal distribution and that mean amount of cholesterol was 175 milligrams with $s = 11.2$ milligrams. Find the margin of error that corresponds to the given statistics and a confidence level of 95%.**

4. **A simple random sample of 125 light bulbs had a mean life of $\bar{x} = 587$ hours with a standard deviation of $\sigma = 43.4$ hours. Construct a 99% confidence interval for the mean life, μ, of all light bulbs of this type.**

5. **In simple random sample of a survey of 71 people, 47 said that they preferred Coca Cola over Pepsi. Construct a confidence interval with 95% confidence of the proportion of people that prefer Coca Cola.**

6. **A simple random sample of survey of 18 working college students found that on average they earned $3,968 a year with a standard deviation of $826. Using a confidence level of 98%, construct a confidence interval for the population standard deviation.**

7. **In a simple random sample of a survey of 56 high school students, 42 said that they preferred CPS over Pre-Calculus. Construct a confidence interval with 99% confidence of the proportion of people that prefer CPS.**

8. **Determine which critical value should be used for the following situation: 99% confidence level; $n = 48$; σ is known; population appears to be very skewed.**

9. **Determine which critical value should be used for the following situation: 95% confidence level; $n = 15$; σ is unknown; population appears to be normal.**

10. **Find the critical value χ_R^2 corresponding to a sample size of 8 and a confidence level of 95%.**

11. **Find the critical value χ_L^2 corresponding to a sample size of 23 and a confidence level of 98%.**

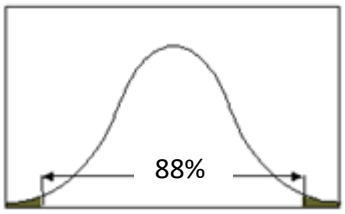
12. **The following confidence interval is obtained for a population proportion, p: (0.605, 0.745). Use these confidence interval limits to find the point estimate, E.**

13. **The following confidence interval is obtained for a population proportion, p: (0.535, 0.575). Use these confidence interval limits to find the point estimate, $\hat{p}$.**

14. **Determine the minimum sample size needed to estimate the population proportion with a margin of error of 0.04, a confidence level of 99%, and with a $\hat{p} = 0.36$.**

15. **How many business students must be randomly selected to estimate the mean monthly earnings of business students in one college? We want 95% confidence that the sample mean is within $138 of the population of the population mean, and the population standard deviation is known to be $636.**

16. **What is the value of α used in describing the confidence interval shown below.**



17. Identify the level of confidence level displayed in the confidence interval shown below.