

Name: _____ date: _____ period: _____

1. Find the critical value for each confidence level.

a. 88%

b. 96%

2. A survey of 30 adults found that the mean age of a person's primary vehicle is 5.6 years. Assuming the standard deviation of the population is 0.8 year, find the margin of error (maximum error) for a 99% confidence interval. Show your work.

3. A researcher wishes to estimate the average amount of money a person spends on lottery tickets each month. A sample of 50 people who play the lottery found the mean to be \$19 and the standard deviation to be 6.8. Find a 95% confidence interval for the true mean population amount of money a person spends on lottery tickets each month. Show your work.

Bonus: A university dean of students wishes to estimate the average number of hours students spend doing homework per week. The standard deviation from a previous study is 6.2 hours. How large a sample must be selected if he wants to be 99% confident of being within 1.5 hours of the population mean? **MUST SHOW WORK!**