BUSAD 265 Name: _____
Exam 3 Practice
19 Oct 2026

Show your work! Write formulas and intermediate steps for full credit!

Problem 1. A manufacturer tests 120 LED light bulbs and finds a mean lifespan of 8,400 hours with a sample standard deviation of 1,200 hours. Construct a 95% confidence interval to estimate the mean lifespan of all LED bulbs produced by the manufacturer.

Problem 2. In a survey of 800 Colorado residents, 520 say they support expanding passenger rail service along the Front Range. Construct a 95% confidence interval to estimate the proportion of Colorado residents who support the expansion.

Problem 3. A researcher randomly selects 16 restaurants in Denver and records the price of a cheeseburger. The sample mean price is $15.40 with a sample standard deviation of $3.20. Construct a 95% confidence interval to estimate the mean price of a cheeseburger at Denver restaurants. Assume prices are approximately normally distributed.

Problem 4. A university surveys 250 undergraduate students and finds they spend an average of 14.6 hours per week working at paid jobs, with a sample standard deviation of 8.5 hours. Construct a 95% confidence interval to estimate the mean number of hours undergraduate students work each week.

Problem 5. A random sample of 600 customers at a grocery store finds that 138 use self-checkout exclusively. Construct a 95% confidence interval to estimate the proportion of customers who exclusively use self-checkout.

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Problem 6. A real estate analyst randomly selects 25 homes sold in Pueblo during the past month. The average selling price is $312,000 with a sample standard deviation of $65,000. Construct a 95% confidence interval to estimate the mean selling price of homes in Pueblo. Assume home prices are approximately normally distributed.

Problem 7. A coffee company measures the amount of coffee in 100 randomly selected bags labeled 12 ounces. The sample mean is 11.92 ounces with a sample standard deviation of 0.35 ounces. Construct a 95% confidence interval to estimate the mean amount of coffee in all bags produced by the company.

Problem 8. A survey of 1,200 registered voters finds that 684 support increasing funding for public education. Construct a 95% confidence interval to estimate the proportion of registered voters who support increased education funding.

Problem 9. An economist collects data from 20 small businesses and finds that their average monthly electricity bill is $840, with a sample standard deviation of $260. Construct a 95% confidence interval to estimate the mean monthly electricity bill for small businesses. Assume monthly electricity bills are approximately normally distributed.

Problem 10. A random sample of 400 recent college graduates finds that their average starting salary is $54,800, with a sample standard deviation of $12,600. Construct a 95% confidence interval to estimate the mean starting salary for recent college graduates.