

1. A store manager in Pueblo conducts a small random sample of 12 grocery stores in Colorado and asks the produce manager at each store for the current price for a head of iceberg lettuce. Using the following results, construct a 95% confidence interval to estimate the price of lettuce.

2.59 1.95 2.65 2.40 1.89 2.19 2.50 2.49 2.30 2.39 1.99 3.09

2. According to a recent survey of 81 fast food establishments in Denver the average cost of a fast-food meal (cheeseburger, french fries and a medium size soft drink) is \$7.62 with a sample standard deviation of \$0.97. Construct a 95% confidence interval to estimate the average price of a fast-food meal in Denver.
3. A marketing researcher surveys $n=200$ adults to determine whether they plan to buy an electric vehicle within the next 5 years. Out of the 200 respondents, 58 say “yes.” Construct a 95% confidence interval to estimate the true proportion of adults who plan to buy an electric vehicle within 5 years.
4. A random sample of 40 apartment tenants in Pueblo finds an average rent of \$917 and a standard deviation of \$179. Assume rents are normally distributed. Construct a 95% confidence interval to estimate average rent in Pueblo.
5. A logistics firm advertises an average delivery time of 50 minutes. Historical data indicate the population standard deviation is $\sigma = 6$ minutes. A quality analyst takes a simple random sample of $n = 36$ recent deliveries and finds a sample mean of $= 52.8$ minutes. Conduct a hypothesis test to determine if the advertised delivery time should be changed. Use $\alpha=0.05$.
6. Construct 95% confidence intervals for the following data.
- $\bar{x} = 110, s = 35, n = 700$
 - $\bar{x} = 4.7, s = 1.2, n = 350$
 - $\hat{p} = .36, n = 100$
6. Conduct these hypothesis tests. Use $\alpha=0.05$.
- $H_0: \mu = 57, H_a: \mu < 57; \bar{x} = 55, s = 8, \text{ and } n=100.$
 - $H_0: \mu = 25, H_a: \mu > 25; \bar{x} = 26, s = 3, \text{ and } n=40.$
 - $H_0: \mu = 72, H_a: \mu \neq 72; \bar{x} = 74.1, s = 5.2, \text{ and } n=64.$