

1. Hotel rates in the US follow the normal probability distribution with a mean of \$124 and a standard deviation of \$27. What is the probability that a randomly selected hotel room will cost...

- a. between \$100 and \$140
- b. between \$130 and \$170
- c. between \$65 and \$90
- d. between \$120 and \$180

2. A study found Americans consume an average of 11.4 pounds of chocolate per year. Assume annual chocolate consumption follows the normal distribution with a standard deviation of 3.6 pounds. What is the probability of a randomly selected person consuming (on an annual basis) ...

- a. less than 7 pounds of chocolate
- b. more than 9 pounds of chocolate
- c. between 8 and 12 pounds of chocolate
- d. more than 16 pounds

3. The average selling price of smartphones purchased by a random sample of 35 customers is \$311. Assume the population standard deviation is \$45.

- a. Construct a 90% confidence interval to estimate the average selling price for the population
- b. Construct a 95% confidence interval to estimate the average selling price for the population

4. A random sample of 40 apartments in Pueblo finds an average rent of \$719. Assume rents are normally distributed and the standard deviation for the population of apartment rents is \$179.

- a. Construct a 90% confidence interval to estimate the average rent in Pueblo.
- b. Construct a 95% confidence interval to estimate the average rent in Pueblo.

5. A newly installed rooftop solar system has been producing energy for 14 days. Average energy production is 45.4 kWh per day with a standard deviation of 3.9 kWh. Assume daily energy production follows a normal distribution. Approximately how many days each year will the system produce between 37.7 kWh and 53.3 kWh of energy?