

Lesson 9 Practice Problems

1. A publishing company is interested in the number of books read each year by people. They send out 50 volunteers to conduct research by collecting random samples of 20 people each and determining the number of books that group read in the previous year. After looking at the sample means, the company estimates that the mean number of books read is 12.4 with a margin of error of 2.4. Based on these values, what interval is likely to contain the true mean number of books read in the previous year by the population?

2. Based on surveys of random samples from people in a town, the proportion of people interested in a new chain restaurant opening in their town is 0.42 with a standard deviation of 0.07. Which of these intervals is the smallest that likely contains 95% of the sample proportions?
 - A. 0.21 to 0.63
 - B. 0.28 to 0.56
 - C. 0.35 to 0.49
 - D. 0.41 to 0.43

3. 10 random samples of 20 people each are used to determine the proportion of people who support the local soccer team over other soccer teams in the league. The proportions for the samples are

0.85	0.70	0.75	0.80	0.65	0.80	0.60	0.75
0.85	0.75						

 - a. What does the proportion 0.85 mean for the first sample?

 - b. The mean of the sample proportions is 0.75 and the standard deviation is 0.08. What margin of error should be used for the estimate of the population proportion?

4. A scientific report says that the proportion of the population that is left-handed is 0.10 with a margin of error of 0.02.

a. Is 0.07 a plausible estimate for the proportion of the population that is left-handed? Explain your reasoning.

b. Is 0.087 a plausible estimate for the proportion of the population that is left-handed? Explain your reasoning.

c. Is 0.128 a plausible estimate for the proportion of the population that is left-handed? Explain your reasoning.

5. A restaurant offers 5 appetizers that the manager thinks sell equally well. After looking over the sales for the previous month, the percentages of sales are:

bruschetta: 17%

pesto bread: 22%

spinach dip: 21%

meatballs: 23%

sampler: 17%

Based on these results, is the manager's thinking accurate? Explain your reasoning.

(From Unit 7, Lesson 8.)

6. Create a dot plot that displays a distribution with at least 9 data values that is symmetric.

(From Unit 7, Lesson 4.)