

UNIT 1 • INFERENCES AND CONCLUSIONS FROM DATA**Lesson 4: Estimating Sample Proportions and Sample Means**

Practice 1.4.1: Estimating Sample Proportions

For problems 1–5, use the given information to calculate the sample proportion, \hat{p} , and the standard error of the proportion, SEP, for each of the described sample populations. Round \hat{p} to the nearest whole percent and round the SEP to the nearest hundredth.

1. A recent opinion poll found that 245 out of 250 people are opposed to a new tax.
2. Marine biologists catching tuna for research found that 16 out of 28 tuna had elevated mercury levels.
3. A new window screen was found to block 1,400 out of 1,540 types of insects from getting through the window.
4. The local meteorologist has been correct in predicting temperatures on 11 of the past 14 days.
5. A gymnast landed without stumbling during 7 out of 13 routine practices.

continued

Name: _____

Date: _____

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Use what you have learned about the sample proportion, \hat{p} , and the standard error of the proportion, SEP, to solve problems 6–10. Round \hat{p} to the nearest whole percent and round the SEP to the nearest hundredth.

- A poll found that 30% of 300 residents polled were opposed to having a state-sponsored lottery. What is the SEP?
- A survey asked people if they would like to live to the age of 120 if doing so required undergoing special medical treatments. 56% of the 2,012 respondents said they would. About how many people were in favor of undergoing special treatments if it meant living to 120? What is the SEP?
- An experiment was found to have an SEP of 10% and a sample proportion of 80%. What was the size of the sample, n ?
- If 10,000 students enrolled at a for-profit college in the same year, and 900 of the students graduated within 6 years, what is \hat{p} ?
- To celebrate 24 years in business, a clothing store's marketing executive is ordering scratch-off discount coupons to give to customers. She would like 40% of customers in the population to receive the highest possible discount, with an SEP of 0.01 for this population. How many coupons should she order?