

AP Statistics – Chapter 8 Review

Lesson	One Sample Proportion	Two Sample Proportion
Symbol for statistic		
Symbol for parameter		
Name of the procedure		
RANDOM condition		
Independent condition		
NORMAL condition		
Formula for standard error		
Formula for margin of error		
General formula for confidence interval		
Specific formula for confidence interval		

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Sample size practice

1. Edgar Martinez and Ingrid Gustafson are the candidates for mayor in a large city. We want to estimate the proportion p of all registered voters in the city who plan to vote for Gustafson with 95% confidence and a margin of error no greater than 0.03. How large a random sample do we need?

2. A college student organization wants to start a nightclub for students under the age of 21. To assess support for the idea, the organization will select an SRS of students and ask each if he or she would patronize this type of establishment. What sample size is required to obtain a 90% confidence interval with a margin of error of at most 0.04 if they suspect $\hat{p} = .75$?

3. Fred wants to find out what proportion of wolverines would prefer to play soccer with a pomegranate rather than a coconut. He wants to be really sure about a very precise estimate and demands that his helpers construct a 99% confidence interval with a margin of error of no more than 1%. How large a sample size will Fred need to prepare for?

2011 AP® STATISTICS FREE-RESPONSE QUESTIONS (Form B)

5. During a flu vaccine shortage in the United States, it was believed that 45 percent of vaccine-eligible people received flu vaccine. The results of a survey given to a random sample of 2,350 vaccine-eligible people indicated that 978 of the 2,350 people had received flu vaccine.

(a) Construct a 99 percent confidence interval for the proportion of vaccine-eligible people who had received flu vaccine. Use your confidence interval to comment on the belief that 45 percent of the vaccine-eligible people had received flu vaccine.

(b) Suppose a similar survey will be given to vaccine-eligible people in Canada by Canadian health officials. A 99 percent confidence interval for the proportion of people who will have received flu vaccine is to be constructed. What is the smallest sample size that can be used to guarantee that the margin of error will be less than or equal to 0.02 ?