

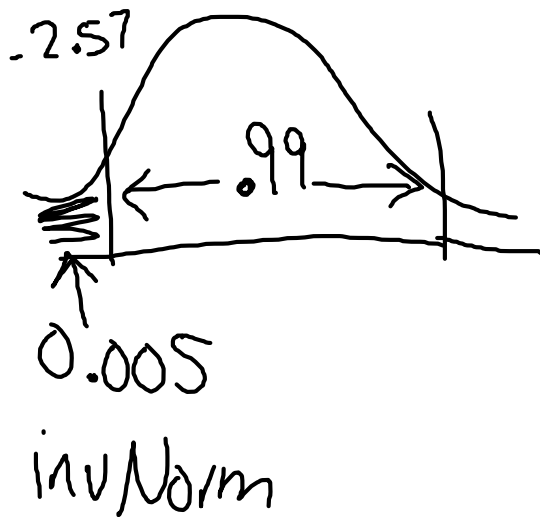
Friday, March 1, 2019

- ▶ Warm-up
 - ▶ **A national opinion poll found that 44% of all American adults agree that parents should be given vouchers that are good for education at any public or private school of their choice. The result was based on a small sample. How large of a SRS is required to obtain a margin of error of 0.03 in a 99% confidence interval?**
- ▶ Check Homework
- ▶ Practice
- ▶ Questions?

A national opinion poll found that 44% of all American adults agree that parents should be given vouchers that are good for education at any public or private school of their choice. The result was based on a small sample. How large of a SRS is required to obtain a margin of error of 0.03 in a 99% confidence interval?

$$ME = z^* SE$$

$$ME = z^* \sqrt{\frac{pq}{n}}$$



1809
people

$$\left(\frac{0.03}{2.57} \right)^2 = \frac{2.57 \sqrt{(.44)(.56)}}{2.57}$$

$$\frac{(.44)(.56)}{\left(\frac{0.03}{2.57} \right)^2} = 1808.27$$

Another FRAPPY



"FRAPPY"

{Free Response AP Problem...Yay!}

The following problem is taken from an actual Advanced Placement Statistics Examination. Your task is to generate a complete, concise statistical response in 15 minutes. You will be graded based on the AP rubric and will earn a score of 0-4. After grading, keep this problem in your binder for your AP Exam preparation.

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 the flu vaccine.

Scoring:

E P I

E P I

E P I

- (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?

E P I

MC Practice