Practice

AP Statistics Quiz A – Chapter 19 **Name**_____

A statistics professor asked her students whether or not they were registered to vote. In a sample of 50 of her students (randomly sampled from her 700 students), 35 said they were registered to vote.

1. Find a 95% confidence interval for the true proportion of the professor's students who were registered to vote. (Make sure to check any necessary conditions and to state a conclusion in the context of the problem.)

- hopefully the 50 were Randomly Selected
- 50 is < 10% of 700
- 35 are reg
  15 are not (Both > 10)

all cond.t.ons seem reasonable
to proceed with a 1proportion Z interval

$.7 \pm 1.96\sqrt{\frac{(.7)(.3)}{50}}$

$.7 \pm 1.96(.06481)$

$.7 \pm .127$

57.3%, 82.7%

2. Explain what 95% confidence means in this context.

IF the process were repeated over and over again using different samples of size 50, 95% of the intervals made would capture the true proportion of reg voters

3. What is the probability that the true proportion of the professor's students who were registered to vote is in your confidence interval?

TRICK QUESTION .... No prob associated w/this.

4. According to a September 2004 Gallup poll, about 73% of 18- to 29-year-olds said that they were registered to vote. Does the 73% figure from Gallup seem reasonable for the professor's students? Explain.

yeah thats in the CI Built here

5. If the professor only knew the information from the September 2004 Gallup poll and wanted to estimate the percentage of her students who were registered to vote to within ±4% with 95% confidence, how many students should she sample?

$ME = C.V * SE$

$.04 = 1.96\sqrt{\frac{(.73)(.27)}{n}}$

$\left(\frac{.04}{1.96}\right)^2 = \frac{(.73)(.27)}{n}$

$4.16493 \times 10^{-4} = \frac{.1971}{n}$

$n = \frac{.1971}{4.16493 \times 10^{-4}} = 473$ students

474 this would violate the