



“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.

Each person in a random sample of 1,026 adults in the United States was asked the following question.

“Based on what you know about the Social Security system today, what would you like Congress and the President to do during this next year?”

The response choices and the percentages selecting them are shown below.

Completely overhaul the system	19%
Make some major changes	39%
Make some minor adjustments	30%
Leave the system the way it is now	11%
No opinion	1%

Scoring:

E P I

(a) Find a 95% confidence interval for the proportion of all United States adults who would respond “Make some major changes” to the question. Give an interpretation of the confidence interval and give an interpretation of the confidence level.

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E P I

(b) An advocate for leaving the system as it is now commented, “Based on this poll, only 39% of adults in the sample responded that they want some major changes made to the system, while 41% responded that they want only minor changes or no changes at all. Therefore, we should not change the system.” Explain why this statement, while technically correct, is misleading.

E P I

Total: __/4