



“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.

At a certain university, students who live in the dormitories eat at a common dining hall. Recently, some students have been complaining about the quality of the food served there. The dining hall manager decided to do a survey to estimate the proportion of students living in the dormitories who think that the quality of the food should be improved. One evening, the manager asked the first 100 students entering the dining hall to answer the following question.

Many students believe that the food served in the dining hall needs improvement. Do you think that the quality of food served here needs improvement, even though that would increase the cost of the meal plan?

___ Yes

___ No

___ No opinion

Scoring:

(a) In this setting, explain how bias may have been introduced based on the way this convenience sample was selected and suggest how the sample could have been selected differently to avoid that bias.

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(b) In this setting, explain how bias may have been introduced based on the way the question was worded and suggest how it could have been worded differently to avoid that bias.

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Total: __/4