



## “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.

A certain state’s education commissioner released a new report card for all the public schools in that state. This report card provides a new tool for comparing schools across the state. One of the key measures that can be computed from the report card is the student-to-teacher ratio, which is the number of students enrolled in a given school divided by the number of teachers at that school.

The data below give the student-to-teacher ratio at the 10 schools with the highest proportion of students meeting the state standards in the third grade and at the 10 schools with the lowest proportion of students meeting the state reading standards in the third grade.

Ratios in the 10 Schools  
with Highest Proportion of Students Meeting Standards

7	21	18	22	9	16	12	17	17	16
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Ratios in the 10 Schools  
with Lowest Proportion of Students Meeting Standards

14	16	18	20	12	14	16	12	20	19
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### Scoring:

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(a) Display a dotplot for each group to compare the distribution of student-to-teacher ratios in the top 10 schools with the distribution in the bottom 10 schools. Comment on the similarities and differences between the two distributions.

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(b) Any statistical test that is used to determine whether the mean student-to-teacher ratio is the same for the top 10 schools as it is for the bottom 10 schools would be inappropriate. Explain why in a few sentences.

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Total: \_\_/4