

8.3 Difference in Proportions

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The screenshot shows a statistics quiz interface. At the top, there's a navigation bar with a bell icon, a dropdown menu for "8.2 Confidence", and a user profile for "Michael Brodskiy". Below this, a breadcrumb trail reads: "Statistics AP-Thompson-Year-12462 (66479) > Activities and Due Dates > 8.2 Confidence interval for proportions".

The main content area is divided into three sections. On the left, a sidebar lists "1 of 17 Questions". The first question is highlighted in blue and shows a progress bar at 100% with the word "Correct". Below it, questions 2 through 9 are listed with progress bars at 90%, 100%, 95%, 95%, 100%, 90%, 100%, and 95% respectively, all marked as "Correct".

The central section displays "Question 1 of 17". The question text is: "Latoya wants to estimate the proportion of the seniors at her boarding school who like the cafeteria food. She interviews an SRS of 50 of the 175 seniors and finds that 14 think the cafeteria food is good. Which of the conditions for calculating a confidence interval for the population proportion p has not been met?".

The options are:

- ☐ All of the conditions have been met.
- ☐ Large Counts condition is not met because $n\hat{p} < 30$.
- ☐ Large Counts condition is not met because $n(1 - \hat{p}) < 30$.
- ☐ Random condition is not met.
- ☒ 10% condition is not met because the sample size of 50 is greater than 10% of the population size (175) of seniors at the boarding school.

At the bottom of the question area, there's a green bar with a checkmark icon and the word "Solved".

On the right side of the question area, there's a "My Attempt" dropdown menu and a "Next Question" button.