

12.3 Inference for Slope

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The screenshot shows a statistics quiz interface. At the top, there is a navigation bar with a bell icon, a back arrow, a dropdown menu showing '12.3 Inference', a help icon, and the user's name 'Michael Brodskiy'. Below this is a breadcrumb trail: 'Statistics AP-Thompson-Year-12462 (66479) > Activities and Due Dates > 12.3 Inference for slope'. The main interface is divided into three sections. On the left, a sidebar titled '1 of 16 Questions' shows a list of 16 questions with their respective scores (100%, 100%, 100%, 95%, 90%, 100%, 100%, 100%) and a 'Correct' status. The middle section is titled 'Question 1 of 16' and contains the following text: 'Using the health records of every student at a high school, the school nurse created a scatterplot relating y = height (in centimeters) to x = age (in years). After verifying that the conditions for the regression model were met, the nurse calculated the equation of the population regression line to be $\mu_y = 105 + 4.2x$ with $\sigma = 7$ cm.' Below this text, a question is asked: 'According to the population regression line, what is the average height of 15-year-old students at this high school?'. There are five multiple-choice options:
☐ $105 + 4.2(7) = 134.4$ cm
☐ $105 + 15 = 120$ cm
☐ $105 + 4.2 + 15 = 124.2$ cm
☒ $105 + 4.2(15) = 168$ cm
☐ $105 + 4.2(15)(7) = 546$ cm
On the right side of the question, there are buttons for 'Resources', 'Give up?', 'Solution', and 'Next Question'. At the bottom right, there is a 'My Attempt' button.