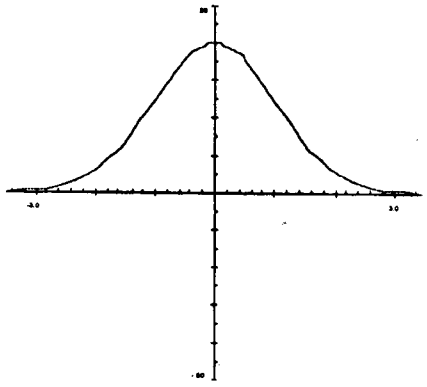
10.1 AP Statistics Name:

Suppose you administer a certain aptitude test to a random sample of 9 students in your school, and that the average score is 105. We want to determine the mean μ of the population of all students in the school. Assume a standard deviation of $\sigma = 15$ for the test.

1. What is the upper critical value for a 98% confidence interval? (Show the key numbers in the sketch of the distribution.)



2. Explain the meaning of "98% confident."

3. What is the standard deviation of the mean, $\sigma_{\bar{x}}$?

4. Calculate a 98% confidence interval for the mean score μ for the whole school. Follow **PAIS**:

5. What sample size would be needed to have a margin of error at most 4 points?