

1. This past year, an elementary school began using a new method to teach arithmetic to first graders. A standardized test, administered at the end of the year, was used to measure the effectiveness of the new method. The distribution of past scores on the standardized test produced a mean of 70 points with a standard deviation of 16 points. If the new method is no different from the previous method, what is the probability that the mean score of a random sample of 60 students will be greater than 75?
2. At one company, the mean amount contributed per employee to a charity drive during a given year was \$37.60. The standard deviation was \$5.88. What is the probability that a random sample of 40 employees yields a mean contribution between \$35 and \$40?
3. An employment agency has found that the mean time required for an applicant to take an aptitude test is 32.5 minutes with a variance of 16. If a random sample of 81 applicant files is drawn, what is the probability the mean time applicants in this sample need for taking the test is greater than a half hour?