

Statistical analysis for managers essay

Profession, Manager



Problems Chapter 7 1. A population of 1,000 students spends an average of \$10.50 a day on dinner. The standard deviation of the expenditure is \$3. A simple random sample of 64 students is taken. a. What are the expected value, standard deviation, and shape of the sampling distribution of the sample mean? b. What is the probability that these 64 students will spend a combined total of more than \$715.21? c. What is the probability that these 64 students will spend a combined total between \$703.59 and \$728.45?

ANS: a. 10.5 0.363 normal b. 0.0314 c. 0.0794 2. The life expectancy in the United States is 75 with a standard deviation of 7 years. A random sample of 49 individuals is selected. a. What is the probability that the sample mean will be larger than 77 years? b. What is the probability that the sample mean will be less than 72.7 years? c. What is the probability that the sample mean will be between 73.5 and 76 years? d. What is the probability that the sample mean will be between 72 and 74 years? e.

What is the probability that the sample mean will be larger than 73.46 years? ANS: a. 0.0228 b. 0.0107 c. 0.7745 d. 0.1573 e. 0.9389 3. A simple random sample of 8 employees of a corporation provided the following information. Employee12345678 Age2532264050542223

GenderMMMMFMMF a. Determine the point estimate for the average age of all employees. b. What is the point estimate for the standard deviation of the population? c. Determine a point estimate for the proportion of all employees who are female. ANS: a. 34 b. 12.57 c. 0.25 . MNM Corporation gives each

of its employees an aptitude test. The scores on the test are normally distributed with a mean of 75 and a standard deviation of 15. A simple random sample of 25 is taken from a population of 500. a. What are the

expected value, the standard deviation, and the shape of the sampling distribution of \bar{X} ? b. What is the probability that the average aptitude test in the sample will be between 70.14 and 82.14? c. What is the probability that the average aptitude test in the sample will be greater than 82.68? d.

What is the probability that the average aptitude test in the sample will be less than 78.69? e. Find a value, C , such that $P(\bar{X} < C) = .015$. ANS: a. 75; 3; normal b. 0.9387 c. 0.0052 d. 0.8907 e. 81.51

5. Students of a large university spend an average of \$5 a day on lunch. The standard deviation of the expenditure is \$3. A simple random sample of 36 students is taken. a. What are the expected value, standard deviation, and shape of the sampling distribution of the sample mean? b. What is the probability that the sample mean will be at least \$4?