

Math – 227 Final
Los Angeles City College Fall 2007

Part – I) Chap. 1- 3 (Test # 1)

Use the following data for problems # 1 – 3: 1, 8, 11, 6, 3, 9, 13, 22, 15, 14, 29

1. a) Find the mean and standard deviation of this data.
b) Find the mode and median of this data
c) Find the Z scores corresponding to the middle 66% of the data (mean \pm s)
d) Find the Z score corresponding to the top 18% of the data.

2. a) Find the data corresponding to the 45 percentile.
b) Find the percentile corresponding to the mode of the data
c) Find $Q1 - Q3$

3. a) Construct a frequency table with four classes.
b) Construct a histogram.
c) Construct a stem and leaf table.
d) Construct a box plot and recognize the data corresponding to the outlier regions.

Part – II) Chap. 4 (Test # 2)

4. Let x represents the number of girls in a family of four children. Construct a probability distribution table corresponding to the number of girls and their corresponding probabilities. Find the mean and standard deviation of this distribution.

5. A test consists of multiple – choice questions, each having five possible answers, one of which is correct .Assume that you answer 10 questions
 - a) Find the probability of exactly 5 correct answers.
 - b) Find the probability of at least 8 correct answers.
 - c) Find the probability of at most 5 correct answers.

6. a) If there is $1/2000$ probability of winning a jackpot an any individual trials of an slot machine, answer the following questions:
 - a) Find the probability of exactly 2 Jackpot in 20 trials
 - b) Find the probability of at most 2 Jackpots in 20 trials
 - c) Find the probability of no Jackpot in 20 trials.

Part – III) Chap. 5 – 6 (Test # 3)

7. If average height of women is normally distributed with a mean of 67 in and an standard deviation of 2.5 in, and we randomly select one woman, find the following:
 - a) Probability of a woman with average height more than 70 inches.
 - b) Probability of a woman with average height between 65 and 71 in.
 - c) Probability of a woman with average height less than 62 inches.

8. Weights of newborn babies in the United States are normally distributed with a mean of 3420 g and standard deviation of 495 g. If a newborn weighs less than 2200 g, is considered at – risk category.
 - a) Find the percentage of at – risk newborns.
 - b) Find the weight corresponds to the lowest 2% weights of newborns.
 - c) If 16 babies are randomly selected, find the probability that their mean weight is more than 3700 g.

9. If there is 2000 births, find the following probabilities:
 - a) Probability of at most 1143 boys.
 - b) Probability of at least 1300 boys
 - c) Probability of 900 to 1200 boys.

Part – IV) Chap. 7 & 8 (Test # 4)

10. Research published in nature magazine revealed that people are more attracted to “feminized” faces, regardless of gender. In one experiment, 50 human subject s viewed both a Japanese female and Caucasian male face on a computer. Using special computer graphic each subject could modify the faces till they attained the “most attractive” face. For the Japanese female only 10 people with a mean of 3 mentioned that their most attractive face was the Japanese face. Test the claim at 95% confidence level that in the population as a whole only 18% of the population of Caucasian would find non Caucasian as attractive

11. In order to study the difference between the mean of average scores of Math – 227 students in different sections of its offering between the day classes and the night ones, a sample of 35 from the day classes and a sample of 40 from the night classes resulted in average score of 71 for the day and 74 for the night classes with sample standard deviations of 4 and 6 for the day and night classes accordingly. We know that the two populations have the same standard deviations. At 95% confidence level check the claim that the nigh classes have a higher average score versus the day classes.

12. In order to repeat the above study, we took 6 pairs of data from the night and the day Math – 227 classes. At 5% check the claim that there is no difference between the two population scores:

Day	67	77	85	76	79
Night	65	75	86	71	80