1. A survey of 30 adults found that the mean age of a person's primary vehicle is 5.6 years. Assuming the standard deviation of the population is 0.8 year, find the best point estimate of the population mean and the 99% confidence interval of the population mean
   (a) **between 5.2 and 6.0 years** (b) between 4.2 and 6.0 years © between 3.2 and 6.0 years (d) between 2.2 and 6.0 years

2. Florida's age distribution has mean value μ = 39.2 and standard deviation σ = 24.8 (measured in years). Use Chebyshev's theorem to find an interval such that the age in years of at least 88.9% of Florida's population is contained within that interval,
   (a) **[0, 113.6]** (b) [1, 113.6] © [2, 113.6] (d) [3, 113.6]

3. How many three-letter words can be formed of 21 consonants if Repetitions are not allowed?
   (a) 1980 (b) 3980 © 4980 **(d) 7980**

4. Given P(E) = 0.7, P(F) = 0.35, and P(F|E) = 0.25 find P(E or F)
   (a) 0.175 **(b) 0.875** © 0.775 (d) 0.675

5. Two dice are rolled. Find the probability of Both are 6 or the sum 10.
   (a) .01 (b) .21 © **.11** (d) .91

6. An urn contains three yellow, four green, and five blue balls. Two balls are randomly drawn without replacement. Find the probability of one green and one yellow ball:
   (a) 0.08 (b) .91 © .71 **(d) .11**

7. Three cards are randomly drawn from a standard 52 card deck without replacement. Find the probability that two cards are aces and one card is a king.
   (a) 0.009 **(b) 0.001** © 0.008 (d) 0.007

8. Most of the time, a medical test is able to correctly indicate if a person has a condition. However, some of the time, there are false positives (it indicates the condition is present when it is not) or false negatives (it indicates the condition is not present when it is there). Use the table below to determine the probabilities for a randomly selected person from the population.

	Condition present	Condition not present	Row total
Test result +	125	10	135
Test result -	15	50	65
Column Total	140	60	200

   What is the probability of a positive test result given that the condition is present?
   (a) .19 (b) .79 © **.89** (d) .59

9. If 30% of the people in a community use the Library in one year, find the probability that in a random sample of 15 people. No more than 2 use the Library
   (a) 0.828 **(b) 0.128** © 0.728 (d) 0.328

10. A basketball player makes 70% of the free throws he shoots. What is the probability that he will make more than 7 throws. If he tries 10 free throws?

(a) **0.382** (b) 0.582 © 0.682 (d) 0.882

11. Find the area under the standard normal curve between z = −2.47 and z = 1.03.
(a) 0.9417 (b) 0.7417 © 0.7417 **(d) 0.8417**

12. Check the following data set for outliers. 5, 6, 12, 13, 15, 18, 22, 50
    (a) data value(s) that fall outside the interval from 1.5 to 36.5
    (b) data value(s) that fall outside the interval from 9.5 to 36.5
    (C) data value(s) that fall outside the interval from 7.5 to 36.5
    (D) data value(s) that fall outside the interval from 6.5 to 36.5

13. Find the probability of getting a red ace when a card is drawn at random from an ordinary deck of cards.
       (a) .01 **(b) .04** © .05 (d) .09

14. The probability that Prof. Rashidul Bari parks in a no-parking zone and gets a parking ticket is 0.06, and the probability that Prof. Bari cannot find a legal parking space and has to park in the no-parking zone is 0.20. On Tuesday, Prof. Bari arrives at York and has to park in a no-parking zone. Find the probability that he will get a parking ticket.
       (a) .80 **(b) .30** © .10 (d) .90

15. In a family with two children, find the mean of the number of children who will be girls.
       (a) 3 (b) 2 © **1** (D) 0

16. A researcher claims that the average cost of men's athletic shoes is less than $80. He selects a random sample of 36 pairs of shoes from a catalog and finds the following costs (in dollars). (The costs have been rounded to the nearest dollar.) Is there enough evidence to support the researcher's claim at alpha = 0.10? Assume σ = 19.2.

    60, 70, 75, 55, 80, 55, 50, 40, 80, 70, 50, 95, 120, 90, 75, 85, 80, 60,
    110, 65, 80, 85, 85, 45, 75, 60, 90, 90, 60, 95, 110, 85, 45, 90, 70, 70
    Identify what type of test it is
    (a) Left tail test (b) Right Tail Test © Double Tail Test (d) T-test

17. Find Pearson's index PI of skewness for data, 1, 3, 11
       (a) 2.13 (B) 3.13 © **1.13** (d) 7.13
18. find the critical value : A right-tailed test with a 0.005.
       (a) **2.58** (b) 3.58 © 5.58 (d) 7.58

19. Professor Bari gave an 100-point quiz to a small class of four students. The results of the quiz were 2, 6, 4, and 8. Find $\sigma_{\bar{x}}$ by taking all samples of size 2 with replacement
(a) 4.581 (b) **1.581** © 2.581 (d) 3.581

20. The data represent a sample of the number of home fires started by candles for the past several years. (Data are from the National Fire Protection Association.) Find the 99% confidence interval for the mean number of home fires started by candles each year. 5460, 5900, 6090, 6310, 7160, 8440, 9930
       (a) between 1785.2 and 9297.6
       (b) between 2785.2 and 9297.6
       (c) between 3785.2 and 9297.6
       (d) between 4785.2 and 9297.6