Probability and Stats Review   Name_____

1. The rates for different company's credit cards are shown below. Find the mean, median, and mode to the nearest hundredth.

19.5%   20%   20.5%   22%   25%   25%

Mean:_____ Median_____ Mode:_____

You are a person with a relatively high credit card rate. You are going to call your credit card company to try to lower your rate. Which measure of central tendency should you use to argue that your credit card rate should be lowered and what argument would you use to justify your choice? Explain.

2. The data below shows the points scored in a basketball game by each player.

0   0   1   3   3   6   10   11   14   14   15   19

a) Find the median: b) Find the lower and upper quartiles:

c) Make a box plot of the data:

d) What is the range of the data? What does this tell you about the data?

e) What is the interquartile range of the data? What does this tell you about the data?
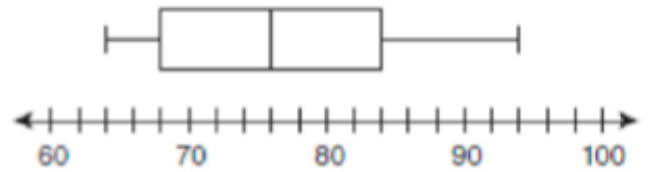
f) Find the standard deviation. What does this measure?

3. Use the following box plot of students test scores:

a) What is the median test score?

b) What percent of students scored above an 84%?

c) What percent of students scored below a 76%?

d) What is the interquartile range of the data?

e) What is the range of the data?

4. The average length of a football career in the NFL is 5.2 years with a standard deviation of 1.5 years.
a) Sketch the normal curve for this distribution, labeling the x-axis with the values that are one, two, and three standard deviations from the mean.

b) What percentage of football players work for 5.2 years or less?

c) If the average length of a baseball player is 5.2 with a standard deviation of .72, what conclusions could you draw when comparing this data with the NFL data above?

5. One class's distribution of female heights is shown to the right.
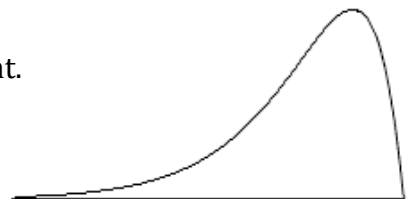
a) Are the heights positively skewed, negatively skewed, or normally distributed?

b) Explain what this means in terms of the females' heights in the class.

c) If you calculated the mean and median of the heights, which would be greater?

6. At a restaurant, you have a choice of 8 different entrees, 2 different salads, 12 different drinks, and 6 different desserts.
   a) How many different dinners consisting of 1 salad, 1 entrée, 1 drink and 1 dessert can you choose?

   b) What's the probability of choosing the chicken entrée, chocolate cake dessert, and 1 of everything else?

7. You must write reports on 3 of the 12 most recent Presidents of the United States for history class. How many different ways can you choose the Presidents?

8. In how many ways can you order 4 people for the 4x100 relay from 9 sprinters?

9. Pizza Shack has 12 different toppings. Suppose you can afford a large pizza with at most 5 toppings. How many different types of pizza can you order (You must have at least 1 topping).

10. Integers from 1 to 100 are randomly selected. State whether the events are mutually exclusive.

   a) Even integers and multiples of 3.

   b) Integers less than 40 and integers greater than 50.

   c) Odd integers and multiples of 4.

   d) Integers less than 50 and integers greater than 40.

11. M and N are mutually exclusive. Find P(M or N) if P(M)= 75% and the P(N) = 17%.

12. Classify each pair of events as dependent or independent.

   a) A member of the junior class and a second member of the same class are randomly selected.

   b) A member of the junior class and a member of another class are randomly selected.

   c) An odd-numbered problem is assigned for homework, and an even numbered problem is picked for a test.

   d) The sum and the product of two rolls of a number cube.

13. Q and R are independent. Find P(Q and R) if P(Q) = 1/8 and the P(R)=2/5.

14. Nine slips of paper numbered 1-9 are placed in a hat. You randomly draw two slips. What is the probability that the first number is odd and the second number is even?

   a) with replacement

   b) without replacement.

15. In a telephone survey of 150 households, 75 respondents answered "Yes" to a particular question, 50 answered "No," and 25 were "Not sure." Find each probability:

   a) P(answer was "Yes")

   b) P(answer was "No")

   c) P(answer was "Not sure")

   d) P(answer was not "Not sure")