True/False: Indicate whether the statement is true or false. Questions are worth 2 points each.

1. T / F   Heights of professional basketball players would be an example of qualitative data.

2. T / F   Descriptive statistics includes the collection, presentation, and description of sample data.

3. T / F   As a result of surveying 50 freshmen, it was found that 16 had participated in interscholastic sports, 23 had served as officers of classes and clubs, and 18 had been in school plays during their high school years. This is an example of numerical data.

4. T / F   The median, the second quartile, and the 50th percentile are all the same.

5. T / F   The histogram of a sample should have a distribution shape very similar to that of the population from which the sample was drawn.

Matching: Match the correct term to the description. 2 points each.

In a community of 10,987, 100 homeowners were randomly selected and asked the amount of their January heating bill. From this group a mean of $76.98 is computed.

____6. The computed $76.98.   A. statistic

____7. The community of 10,987.   B. population

____8. The 100 homeowners.   C. sample

____9. The 100 heating bills.   D. parameter

____10. The mean bill for all homes.   E. experiment

                                                      F. data

Multiple Choice: Identify the choice that best completes the statement or answers the question. 5 points each.

____ 11. For the following stem & leaf display where the stem represents the tens and the leaves represent the ones, identify the number of original data points that landed in the 20's.

```
1|0 2 5 5 6 6 6 9
2|0 2 2 6 7 7
3|0 1 2 3
4|1 6
```

    a. 20   b. 6   c. 8   d. 4

___12. A group of hypertensive patients (with diastolic blood pressure between 110 and 130) were given a medication for reducing elevated blood pressure. The decreases in blood pressure produced by the medication were categorized into four categories as follows:

Category	Decrease in Pressure
A--Marked decrease in blood pressure	15 or more units
B--Moderate decrease in blood pressure	10 to less than 15 units
C--Slight decrease in blood pressure	5 to less than 10 units
D--Stationary blood pressure	0 to less than 5 units

Thirty patients who used the medication experienced the following blood pressure reductions. Give the height of each at the four bars of a bar graph for these results.

12	15	6	4	20	17	25	4	5	18	10
12	18	13	14	20	30	12	14	17	30	18
10	8	16	32	27	13	8	4			

a.

Category	Height of Bar
A	14
B	9
C	4
D	3

b.

Category	Height of Bar
A	13
B	10
C	4
D	3

c.

Category	Height of Bar
A	15
B	10
C	5
D	0

d.

Category	Height of Bar
A	30
B	15
C	10
D	5

___13. At a large company, the majority of the employees earn from $20,000 to $30,000 per year. Middle management employees earn between $30,000 and $50,000 per year while top management earn between $50,000 and $100,000 per year. A histogram of all salaries would have which of the following shapes?

a. Symmetrical
b. Uniform
c. Skewed to right
d. Skewed to left

___14. Which of the following are needed when using graphic representations of sets of data?
  a. A descriptive and meaningful title
  b. A proper identification of the vertical scale
  c. A proper identification of the horizontal scale
  d. All of the above

___15. The following set of data represents letter grades on term papers in a rhetoric class:
         A, A, A, B, B, B, B, C, C, C, C, C, C, C, C, C, C, C, D, D, D, F.
      Select the most appropriate measure of central tendency for the data described.
  a. Mean   b. Median   c. Mode   d. Midrange

___16. Which of the following is a correct statement?
  a. The mean is a measure of the deviation in a data set.
  b. The standard deviation is a measure of dispersion.
  c. The range is a measure of central tendency.
  d. The median is a measure of dispersion.

___17. A sample of twenty-five snow blowers of a given brand were filled with gasoline (one
      gallon) and allowed to run until the tank was empty. The times (in minutes) that the snow
      blowers operated were recorded as follows:
         65   70   60   65   67   68   63   62   63
         70   72   66   63   66   66   62   70   58
         60   60   60   62   67   71   65
      What is the mode for this set of data?
  a. 65.0
  b. 60.0
  c. 64.84
  d. 66.0

___18. The commuting distance was determined for each of 10 employees at Acme
      manufacturing. One of the employees lives in another town and has a large commuting
      distance. The 10 distances were as follows: 5, 10, 7, 15, 10, 12, 8, 120, 20, 18. What is
      the median distance?
  a. 22.5
  b. 10
  c. 11
  d. 10.5

___19. Consider the following sample: 26, 49, 9, 42, 60, 11, 43, 26, 30, and 14. Find the mean.
  a. 31.0
  b. 26.0
  c. 28.0
  d. 155.0

___20. Which of the following is the weakest measure of dispersion?
   a. Range
   b. Mean absolute deviation
   c. Standard deviation
   d. Variance

___21. A statistics test was given with the following results:

| 80 | 69 | 92 | 75 | 88 | 37 | 98 | 92 |
| 90 | 81 | 32 | 50 | 59 | 66 | 67 | 66 |

   Find the variance of the scores.
   a. 19.64
   b. 385.85
   c. 66
   d. 361.73

___22. In which of these situations (A, B, or C) is the x-value lowest in relation to the sample
   from which it comes? These samples come from three different populations.

   Situation A: $x = 6$, $\bar{x} = 20.0$, $s = 9.0$
   Situation B: $x = 350$, $\bar{x} = 400.0$, $s = 20.0$
   Situation C: $x = 1.6$, $\bar{x} = 2.00$, $s = 0.30$

   a. Situation A
   b. Situation B
   c. Situation C
   d. None of the above

___23. The annual salaries (in $100) of high school teachers employed at one of the high
   schools in Kent County, Michigan are listed below:

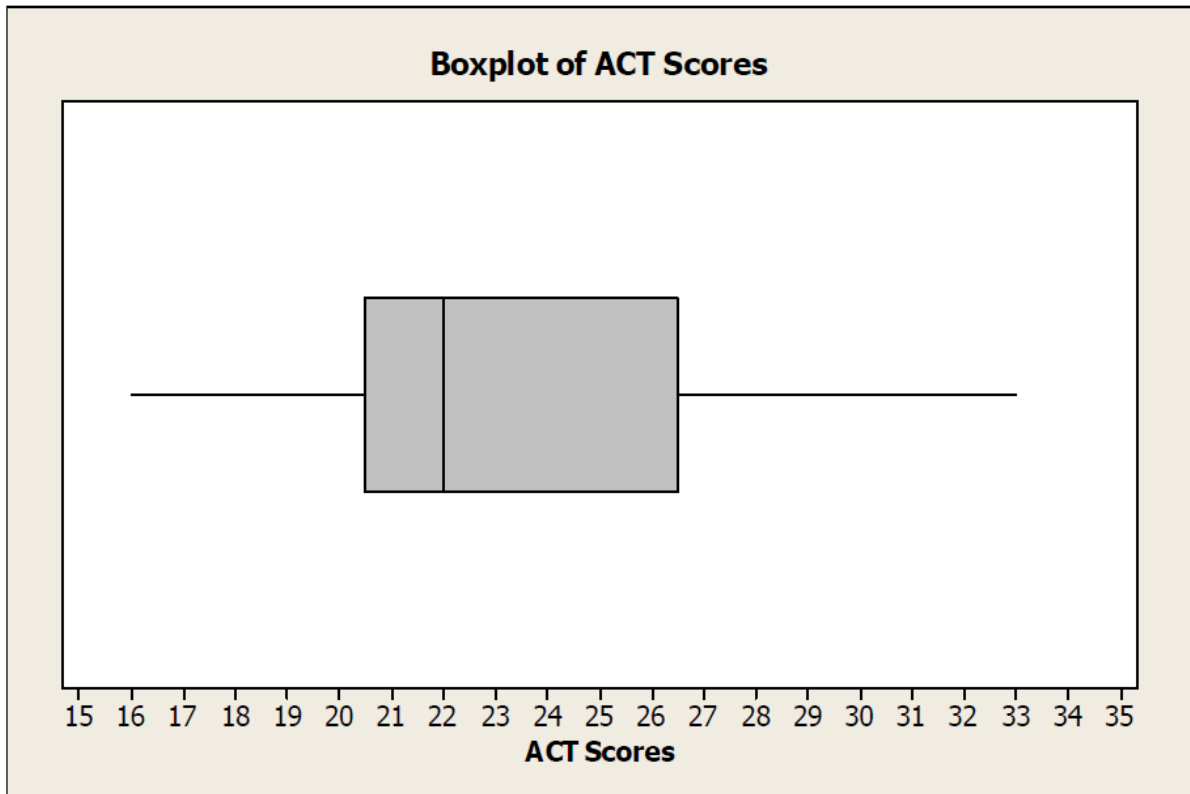| 600 | 440 | 461 | 419 | 397 | 477 | 464 | 275 | 507 | 497 |
| 332 | 373 | 440 | 373 | 501 | 382 | 377 | 301 | 323 | 383 |

   Find the first quartile for these salaries.
   a. $47,050
   b. $42,175
   c. $37,300
   d. $9,750

___24. If the 70th percentile for a set of exam scores is 82, what does this mean?
   a. At most 70% of the exam scores are smaller in value than 82
   b. At most 82% of the exam scores are smaller in value than 70
   c. At least 70% of the exam scores are larger in value than 82
   d. At least 82% of the exam scores are larger in value than 70

___25. The following boxplot represents ACT scores for 25 members of a local graduating class:

Boxplot of ACT Scores

15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35
ACT Scores

What was the median ACT score for the class?
a. 16
b. 20.5
c. 22
d. 26.5
e. 33

___26. Which of the following types of graphs would not be good for qualitative data?
a. Box-and-whiskers display
b. Circle graph
c. Bar graph
d. Pareto diagram