Instructions: Put your name on the top before beginning. On your own paper answer the following. For problems 1-12 number your paper and write the correct word that will best fill in the blank(s). In problems 13-15 show all pertinent work and box your final answer.

Center	Data	Description	Design	Inference
Interval	Nominal	Ordinal	Parameters	Population
Qualitative	Quantitative	Random Sample	Ratio	Sample
Sampling	Shape	Statistics	Variation	

1.   The population _____ can be inferred from sample statistics.
2.   The two main classifications (types) of data are _____ and _____.
3.   There are two types of qualitative data. They are _____ and _____
4.   The two types of quantitative data are _____ and _____.
5.   The art and science of learning from data is called _____.
6.   The information that we collect from experiments or surveys is called _____.
7.   Planning the methods for collecting the data to study the tolerances of ball bearings would be an example of the _____ aspect of statistics.
8.   From past figures, it is estimated that 37% of voters will vote in the November elections. This is an example of the _____ aspect of statistics.
9.   A _____ assures that the sample will be representative of the population.
10.   The mean is a measure of _____.
11.   The range is a measure of _____.
12.   A histogram can be used to see the _____ of data.

13.   Using the following data which represents the time in hours, that 18 professional fitness experts spend working out.

a) Find the mean of the data.
b) Find the mode of the data.
c) Find the median of the data (include the indicator function).
d) Find the range of the data.
e) Find the variance and the standard deviation of the data.
f) Find Q_1 and Q_2 (include the indicator function).
g) Draw a boxplot that represents this data. Make sure that it is scaled
h) Calculate the IQR?

Stem (x 1)	Leaf (x 0.1)
7	1 1 1
7	3
7	5 5 5
7	
7	8 8 9 9
8	0 0
8	2 2 2 2
8	
8	
8	9

g) Should we consider the maximum data point to be an outlier?
   Use IQR as a criterion.
i) Using the stem and leaf and the mean and median to support your answer, talk about
   the skewness of this data.
j) Find the z-score of the 8th data point from the top.
EC) If this data were symmetric, what should you expect the 8th data points z-score to be
   (approximately)?

14.   For the following data which the dependent variable represents the percentage
       grades for 15 randomly chosen statistics students. The independent variable is the
       number of absences for each student.

a) Draw a scatterplot for the data.
b) Do you see any correlation? Is it positive or negative or zero?
c) Find the measure of the correlation – r.
d) What is r^2 and what does it measure?
e) Find the regression equation for this data.
f) Predict the grade of a student that has missed 3 days of class.
g) What is the residual of the observed (9, 81)?

X	Y
5	79
6	78
2	86
12	56
9	75
5	90
8	78
15	48
0	92
1	78
9	81
3	86
10	75
3	89
11	65

15.   For the following frequency table representing 100 people's
       systolic blood pressure in mmHg. The ages of the people in this
       study were 25-40 years old.

a) Find the class width.
b) What is the lowest class boundary?
c) What is the 1st class midpoint?
d) What is the last class' upper class limit?
e) Draw a histogram for this data.
   Label it correctly.

Class (mmHg)	Frequency
100-109	15
110-119	35
120-129	25
130-139	15
140-149	8
150-159	2