Q7(12 pts) A set of bivariate data consisting of measurement on two variable X and Y is,

(1,1), (2, 3), (2, 4), (3,5), (3, 6), (4, 8), (4,9)

(a) Draw a scatter plot to display these data, is there an underlying relationship between X and Y, describe it.

(b) Calculate the correlation coefficient. Would you consider the correlation to be weak or strong. Why?

(c) Calculate the best fitting line for these data. .

Q3 (10 pts) (a) Find the median, the lower and upper quartile and lower and upper fence for the following data. 4, 0, 5, 3, 6, 2, 5, 9, 5, 3

(b) Find the Z-score for the smallest and largest observations in part a . Is either of these observations unusually small or large?

Q4 (10 pts) mean and standard deviation of a sample of n =500, observations were 50 and 10 respectively. You are told that data is mound shaped.

(a) what can be said about the proportion of observation between 40 and 60.

(b) What can be said about the proportion of observation between 30 and 70.

(c) What can be said about proportion of observation smaller then 30

(d) What can be said about proportion of observation greater than 50

Q1 (6pts) Construct a table for the pie chart from following data. Showing sector angels. DO NOT draw pie chart.

Car model	**number purchased**
Chevrolet	45
Ford Focus	30
Ford Taurus	60
Pontiac	15
Toyota camry	30

Q2 (8pts)Find the minimum class width and convenient class width for following twenty observations and right down the table for histogram if, (a) number of class = 6
(b) number of class = 9. DO NOT draw histogram.

2, 3, 7, 13, 19, 26, 38, 36, 30, 4, 7, 9, 27, 30, 3, 3, 17, 18, 20, 21

Q5 (10pts)True or False

(a) A branch of statistics discipline that is used to develop and utilize techniques for effectively presenting numerical information is called inferential statistics.

(b) A variable that is normally described in words rather than numerically is a qualitative variable.

(c) Statistical is the process of making an estimate, prediction or decision about a population based on sample data

(d) The most important and commonly graphical presentation of quantitative data is Histogram.

(e) The difference between a histogram and a bar chart is that the histogram represents quantitative data while the bar chart represents qualitative data

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(f) A skewed histogram is the one with a long tail extending either to the right or left.

(g) Stem and leaf plots are often used to analyze qualitative data in most real life applications.

(h) Mean is a measure of variability.

(i) If correlation coefficient , r = +1 or -1 then all the data points lie exactly on a straight line.

(j) A perfect straight line sloping upward will produce a covariance value of +1

Q6 (4pts) Identify variable as qualitative or quantitative (discrete or continuous)

(a)Amount of time spent assembling a five shelf book case.

(b)Color preference for a nursery

(c)Number of children in a beginning swimming class

(d)Rating of US foreign policy in middle east (fair , biased)