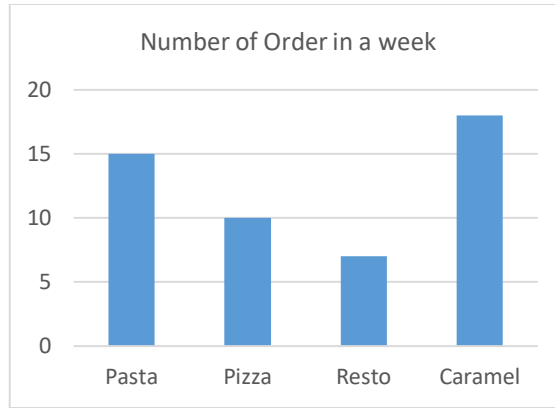


**Question 1: (10 points)**

Consider the graph of the order done by customer in Italian restaurant over given week.

- a) What is the type of the variable under study (Graphed)?
- b) According to customers, what is the least favored order?
- c) How many orders were done during the week?
- d) What is the percentage of pizza orders



**Question 2: (14 Points)**

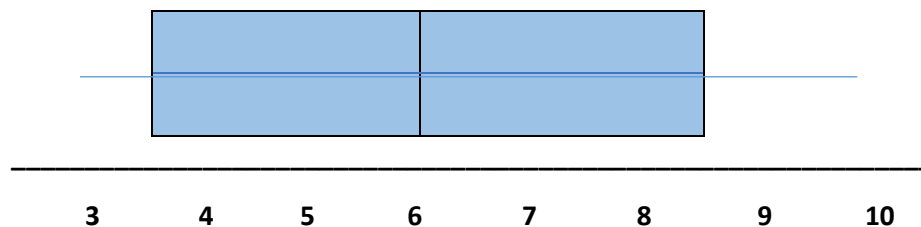
Ten randomly chosen students were asked how many times they had missed class during a certain semester, the answers were as follows:

1	1	2	3	5	7	7	8	8	8
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- a) What is the Sample mean (Arithmetic)?
- b) What is the Median?
- c) What is the Mode?
- d) Based on the values of the arithmetic mean, median, and mode, what is the most likely shape of distribution?
- e) Find the Sample Variance. (Round your answer to the nearest hundredth)

**Question 3: (8 Points)**

Consider below the boxplot for a sample waiting time a bus station. Use the boxplot to find the following:



- a) Median
- b) Lower Quartile
- c) Upper Quartile
- d) Minimum and Maximum

**Question 4: (8 points)**

In a survey, aiming to study the average number of credit cards owned by top CEOs the following data was collected.

Number of credit card: X	Number of CEOs: Frequency	Relative Frequency
0	7	
1	25	
2	35	
3	30	
4	3	
Total	100	

- a) Find the relative frequency for each value of X.
- b) How many CEOs own more than two credit cards?
- c) What is the percentage of CEOs having less than two credit cards?

**Question 5: (7 points)**

A hospital employs 200 persons on the nursing staff. Fifty are nurse's helpers, 40 are practical nurses, and 110 are registered nurses. A nurse's helper receives \$8 an hour. A practical nurse \$15 an hour and registered nurse \$24 an hour. What is the weighted mean hourly wage (pay)?

**Question 6: (8 points)**

A sample of the homes currently offered for sale revealed that mean asking is \$70,100. The median \$75,900. The sample standard deviation is \$5,900.

- a) What is the Pearson's coefficient of skewness? (Round your answer to the nearest hundredth)
- b) Describe the skewness of the distribution based on the computed coefficient.

**Question 7: (10 points)**

Listed below are the commission earned last week by a sample of 16 brokers working for an investment company.

\$310	\$200	\$400	\$390	\$230	\$205	\$400	\$213
\$300	\$190	\$320	\$200	\$240	\$305	\$308	\$280

- a) What is the third quartile for the distribution of commissions?
- b) What is the first quartile for the distribution of commissions?

**Question 8: (12 points)**

Consider below the monthly cost of electricity bill for 20 houses located in same neighborhood during December. The data grouped in the following frequency distribution table:

Class	Frequency (f)	Class Midpoint (M)	f.M	M- $\bar{x}$	(M- $\bar{x}$ ) <sup>2</sup>	f.(M- $\bar{x}$ ) <sup>2</sup>
\$85 up to \$95	3					
\$95 up to \$105	5					
\$105 up to \$115	5					
\$115 up to \$125	3					
\$125 up to \$135	4					
<b>Total</b>	<b>20</b>					

- a) Copy the above table to your answer booklet and fill the table.
- b) Find the sample mean of monthly cost.
- c) Find the sample variance of the monthly cost. (Round your answer to the nearest hundredth)

**Question 9: (15 points)**

The Yes/No and undecided responses to a survey question are broken down according to employment status and the sample results are given below:

Employment Status	Response			Total
	Yes	No	Undecided	
Employed	30	25	5	60
Unemployed	20	15	5	40
<b>Total</b>	<b>50</b>	<b>40</b>	<b>10</b>	<b>100</b>

- a) If person is selected at random, what is the probability that **employed**?
- b) If person is selected at random, what is the probability that **Yes**?
- c) If person is selected at random, what is the probability that he is employed **and** he says yes?
- d) **Given** that the selected person is employed. What the probably that he is undecided?
- e) **Given** that the selected person says yes. What is the probably that he is unemployed

**Question 10: (8 points)**

A survey of top executives revealed that 30% of them read Time Magazine , 25% read Newsweek and 35% U.S. News. There are 13% percent read both Time **and** U.S.

- a) What is the probability that a particular top executive reads Newsweek?
- b) What is the probability that a particular top executive reads **either** Time or U.S. News?
- c) What probability that a particular top executive reads neither Time nor U.S. News? (**Hint**: Complement Event)

**End of Questions**