1. Specify the data type our variable of interest is:
   - What is his education level? (primary, high school, UG, PG)
   Ans: It is ordinal, categorical data with 4 levels.

2. What are the quartiles for the following set of numbers?
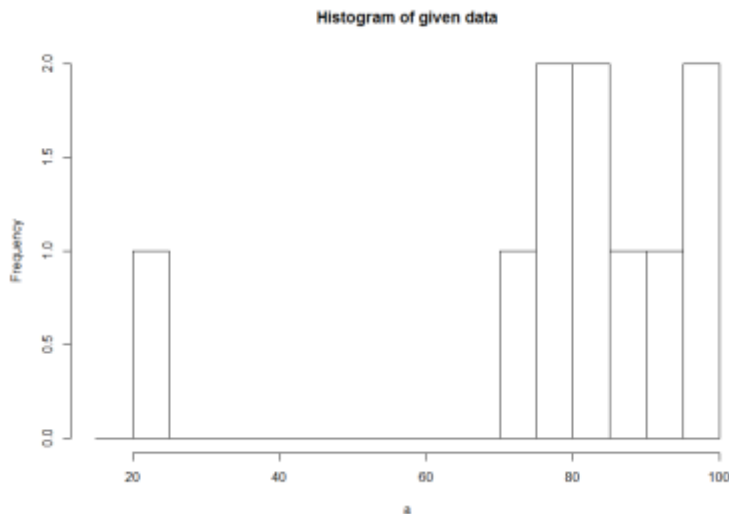   8, 11, 20, 10, 2, 17, 15, 5, 16, 15, 25, 6
   Ans: Arrange the numbers in ascending order i.e. $2, 5, 6, 8, 10, 11, 15, 15, 16, 17, 20, 25$
   1st quartile 7.50 2nd quartile is 13 and 3rd quartile is 16.25

3. Create a histogram for the following test scores: 99, 97, 94, 88, 84, 81, 80, 77, 71, 25.
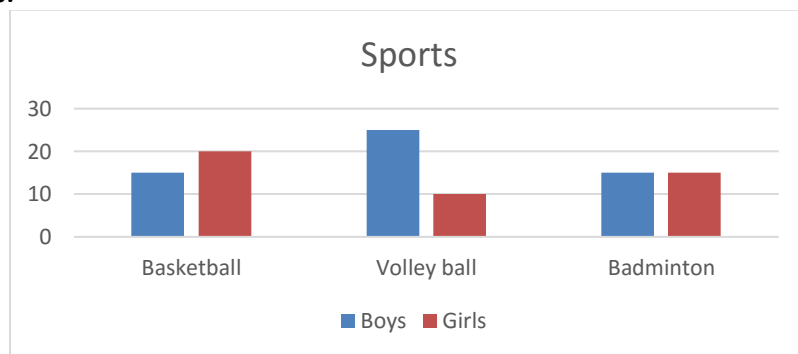   **Ans:**

4. Create required plot to explain the data given below.

| Sport	Boys	Girls	Total
Basketball	15	20	35
Volley ball	25	10	35
Badminton	15	15	30

Ans:

On comparing all the sports the most preferred sports are basketball and volley ball. We can compare females and males using bar plot.

Given the data set Pizza sales per day

Place	No of orders		Online Ordering		Age group of 15-30		Average time to sale(in min)		
	Females	*Males*	*Females*	*males*	*Females*	*males*	*Small*	*Medium*	*large*
A	*400*	*350*	*300*	*300*	*200*	*200*	*15*	*20*	*15*
B	*100*	*250*	*70*	*100*	*80*	*200*	*17*	*22*	*24*
C	*70*	*140*	*50*	*100*	*30*	*100*	*20*	*21*	*17*
D	*387*	*150*	*300*	*70*	*250*	*110*	*18*	*15*	*26*
E	*500*	*600*	*250*	*250*	*300*	*400*	*20*	*25*	*30*

5. What is the percentage of females among the age group 15-30 ordering pizza at Place D? Show graphically.
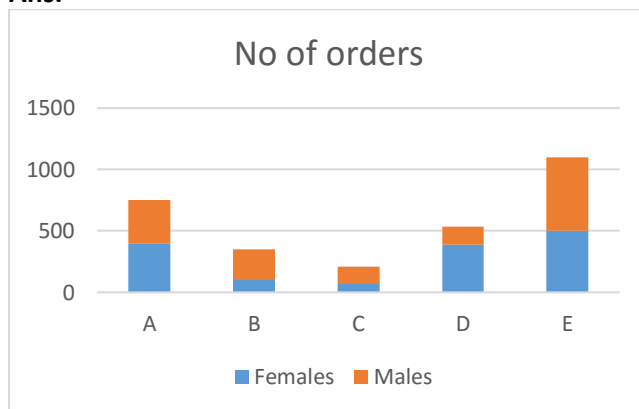**Ans:**
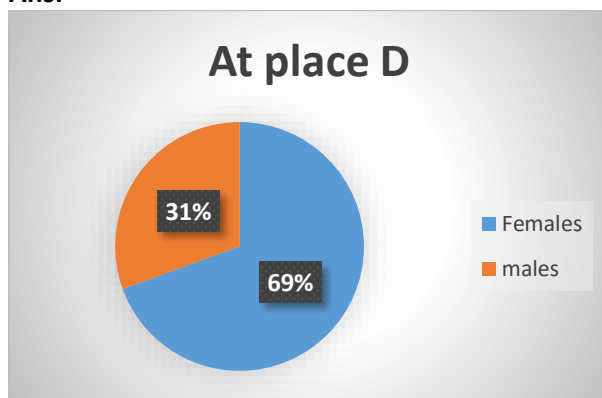
From the pie chart 69% of females among the age group 15-30 ordering pizza at place D. Females prefer pizza more than males at place D
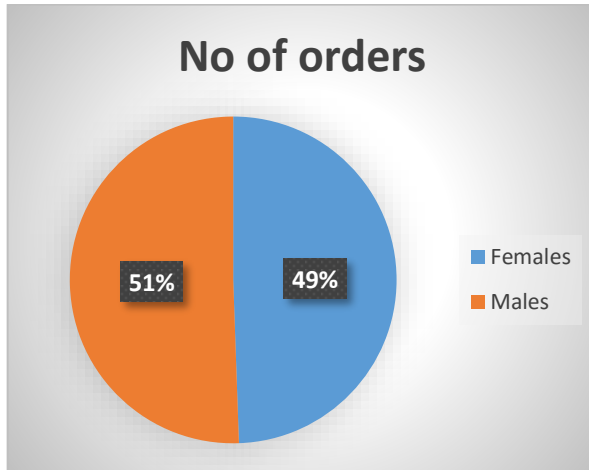
6. What is the best place to get the maximum sales?
Ans.

By seeing the graph "E" is the best plece to get maximum sales. At the same time we can also conclude males order pizza more than females at place E.

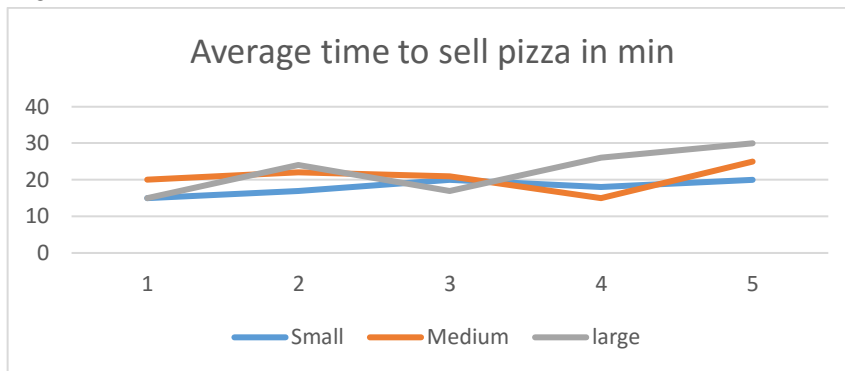**7.** Which gender is purchasing maximum number of pizzas?
Ans:

From the graph, it seems both are purchasing pizza approximately equally

**8.** What is the average time taken to sell a Pizza?
Ans:

From the data, it take 20 minutes to sell a pizza averagely.

9. An ice cream shop keeps track of how much ice cream they sell versus the temperature on that day. The two Variables are Ice cream sales and temperature. Here are their figures for the last 12 days: Find any relationship?

Ice cream sales vs temperature	
Temperature	Ice cream sales
14.2°	$215
16.4°	$325
11.9°	$185
15.2°	$332
18.5°	$406
22.1°	$522
19.4°	$412
25.1°	$614
23.4°	$544
18.1°	$421

|	
22.6°	*$445*
17.2°	*$408*

Ans:
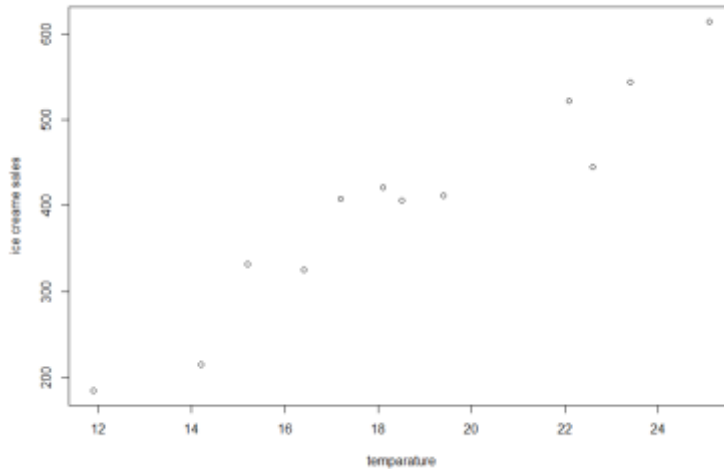
We can observe a linear relationship between sales and temperature.

10. A town has 15 neighborhoods. If you interviewed everyone living in one particular neighborhood, would you be interviewing a population or a sample from the town? Would this be a random sample?
Ans: We are interviewing sample but it is not random since we are interviewing only one neighborhood.

11. For the following stock price one-year percentage changes, plot the data and identify any outliers. Find the mean, median and variance.
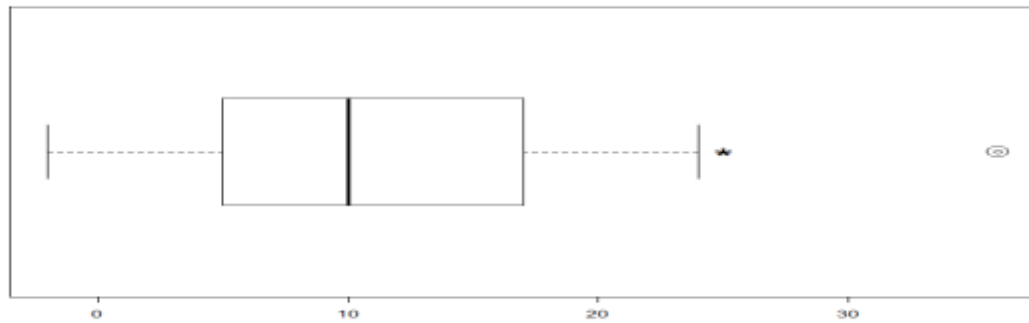
Intel	-6.9%
AT&T	46.5
General Electric	12.1
ExxonMobil	20.7
Microsoft	16.9
Pfizer	17.2
Citigroup	16.5

stock price one-year percentage changes
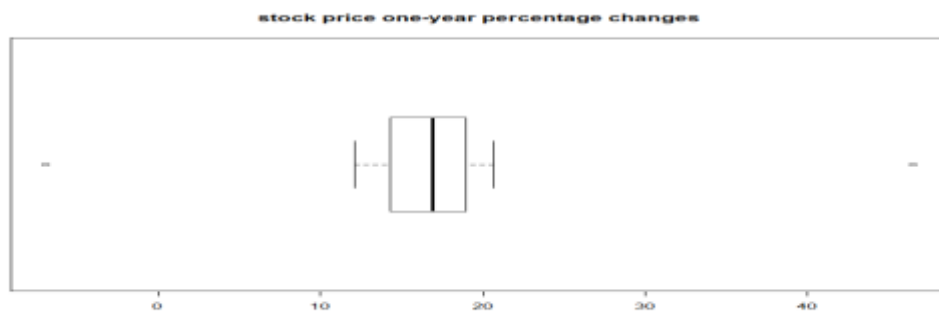
Ans:
From the boxplot, we can suspect some outliers.

12. Refer to the box plot below to answer the questions.

I. What is the interquartile range for this data set?
Ans: 16.5-5.75= 10.75 approximately

II. What can you say about the skewness of this data set?
Ans: We can say it is positively skewed from the graph.

III. For this data set, the value of 9.5 is more likely to be (choose one)
   a) The first quartile rather than the median.
   b) The median rather than the first quartile.
   c) The mean rather than the mode.
   d) The mode rather than the mean.
Ans: b) It is median rather than 1st quartile

IV. If a data point that was originally 26 is changed to 0, how would the boxplot be effected?
Ans: There will be a shift in quartiles and it increases the skewness of the data. We can observe that there are no outliers after the shift.