Frequently Asked Questions

1. Name the five categories of frequency graph.

Answer:

- Histograms
- Frequency Polygons
- Frequency Curves
- Ogives
- Z-Charts

2. What are the steps for creating Box and Whisker charts?

Answer: The steps for creating box and whisker plots are:

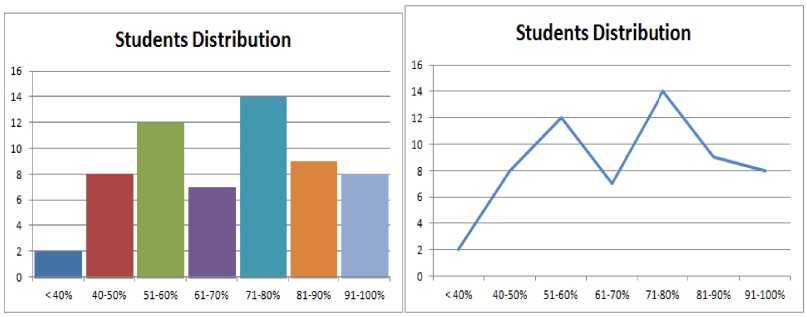
1. Ordering the data.
2. Finding out the medians.
3. Finding out the medians of each half.
4. Finally plot the box.

3. How Box-and-whisker plots are used for a variety of purposes in our daily lives?

Answer: Box-and-Whisker plots are used in our daily life, some of the examples are:

1. Policy making: To determine the most deserving segment to benefit from policies
2. Financial decision making: To determine the most economical actions to achieve objectives
3. Understanding of imbalances: For example: Social & Economic conditions across regions.

4. In the following pictures, compare Histogram with the line graph.



Answer: Apart from the distinctly different visual representation, there are two significant differences between Line Graphs and Histograms.

In a line graph, the vertical frequency lines are separate and unconnected to each other. In Histogram, the area of each rectangle is proportional to the frequency whereas, the line graph does not allow us to do such measurements and comparisons.

5. Explain the rules for making Histograms.

Answer:

- Class intervals or items must be plotted on the X-axis and frequencies must be plotted on the Y-axis.
- The series must be exclusive for all the frequency distribution graphs including Histograms. If it is in any other form, for example, inclusive, open-end or cumulative, it must be first converted into exclusive series before plotting the graph.

6. For the following data, convert the unequal class intervals into equal class intervals.

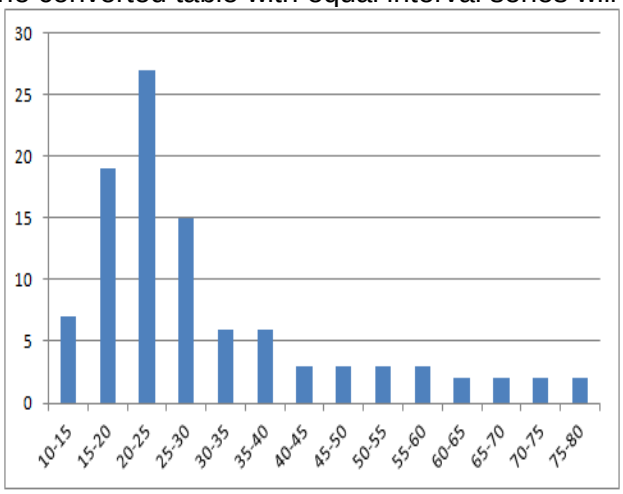
Class	Frequency
10-15	7
15-20	19
20-25	27
25-30	15
30-40	12
40-60	12
60-80	8

Answer: Here the smallest class interval is of 5 units. Hence, convert all the intervals to this size. 30-40 class interval will be converted to 2 intervals of 5 and frequency will be divided by 2 i.e., 12/2=6. 40-60 and 60-80 class interval will be converted to 4 intervals and frequency will be divided by 4 i.e., 12/4=3 and 8/4=2.

The converted table with equal interval series will look like this.

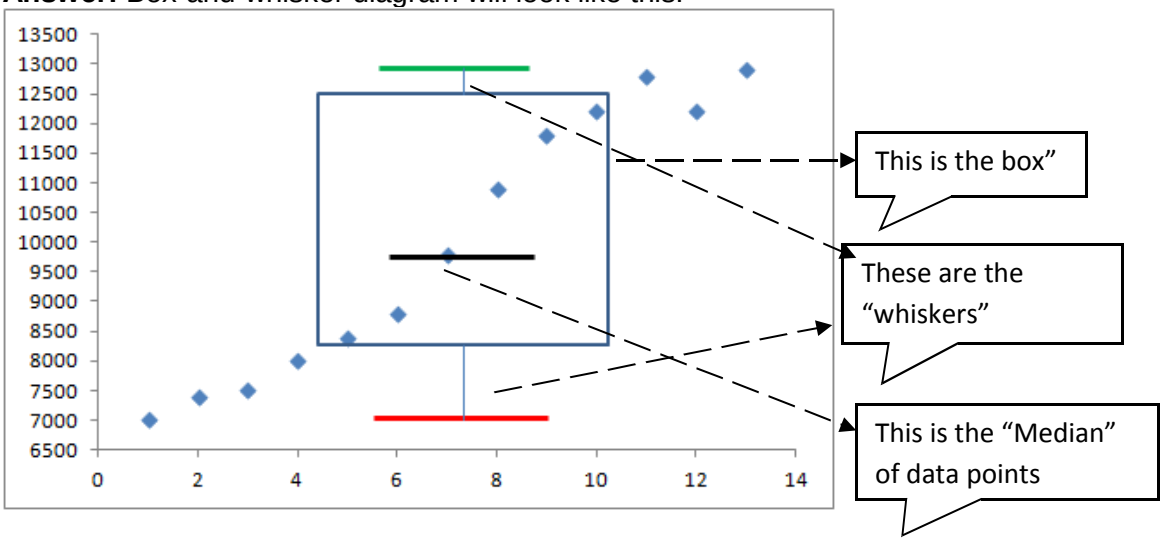
Class	Frequency
10-15	7
15-20	19
20-25	27
25-30	15
30-35	6
35-40	6
40-45	3
45-50	3
50-55	3
55-60	3
60-65	2
65-70	2
70-75	2
75-80	2

The Histogram using the converted table with equal interval series will look like this.



7. Construct a Box-and –Whisker Chart and show the following:
   Box
   Whisker
   Median

Answer: Box-and-whisker diagram will look like this:

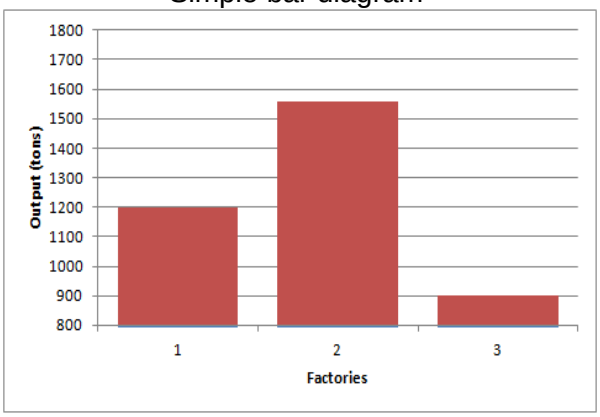


8. With the help of the following data, prepare a simple bar diagram.

Factories	Output (Tons)
1	1200
2	1550
3	900

Answer:
The simple bar diagram will look like this.

Simple bar diagram

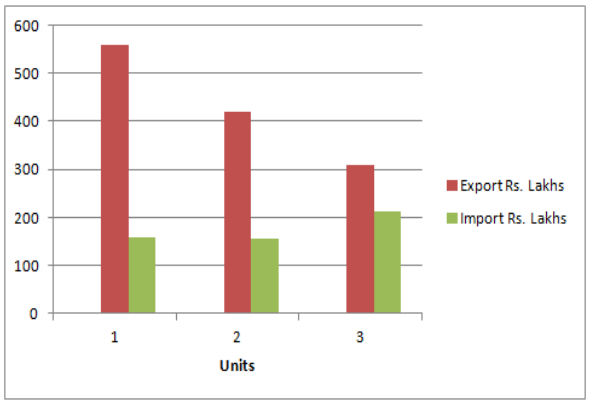


9. With the help of the following data, prepare a multiple bar diagram.

Year	1	2	3
Export (In Lakhs)	550	415	310
Import(In Lakhs)	150	150	210

Answer:
The multiple bar diagram will look like this.

Multiple bar diagram

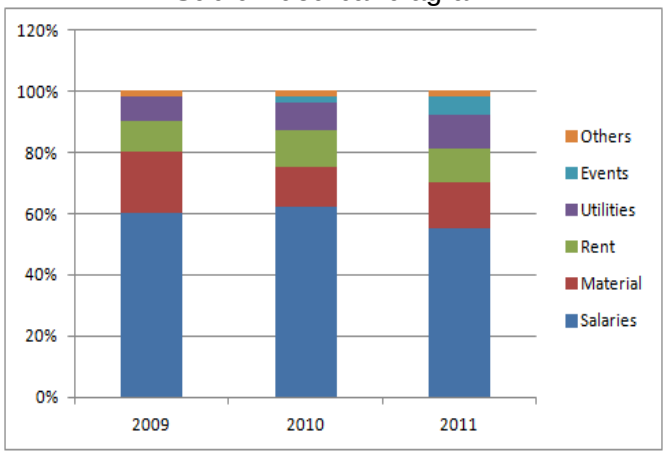


10. With the help of the following data, Sub-divided bar diagram a multiple bar diagram.

Types of Expenditure	Expenditure in the year 2009 in %	Expenditure in the year 2010 in %	Expenditure in the year 2011 in %
Salaries	60	64	56
Materials	20	16	18
Rent	8	10	8
Utilities	8	8	10
Events	0	2	4
Others	2	2	2

Answer:
The sub-divided bar diagram will look like this.

Sub-divided bar diagram



11. What is frequency polygon?

Answer: A frequency polygon is created from a histogram when straight lines join the midpoints of the rectangles and the extremes are joined with the base.

12. What do you mean by upper quartile and lower quartile?

Answer: Upper quartile is the collection of data points above the median as is also stated as Q3. Lower quartile represents the data points below the median as is stated as Q1.

13. List the advantages of Frequency Polygon.

Answer:

- It is simpler to understand compared to the underlying histogram.
- It shows a vivid outline of the data pattern.
- As the number of classes and number of observations increase, the frequency polygon becomes smoother & makes it easier to interpret the data.

14. How box plots are depicted?

Answer: Box plots are depicted using the five-member summaries of numerical data.These summaries are:

- The Smallest Observation
- Lower Quartile
- The Median
- Upper Quartile
- The Largest Observation

15. Define Histogram.

Answer: A histogram is a bar graph that shows how frequently data occur within certain ranges or intervals. The height of each bar gives the frequency in the respective interval.