Graphical Representation of categorical data:

i) Bar diagram

ii) Pie-diagram or Pie-chart

iii) Pictogram and

iv) Line diagram.

i) ## Bar Diagram:

A bar diagram, also known as bar chart is a form of presentation which the frequencies are represented by rectangles usually separated along the horizontal axis and drawn as bars of convenient widths.

Example: Consider the health professional data. The numbers of responses in each category was totaled to give the following frequency distribution.

Frequently — 49
Occassionally — 71
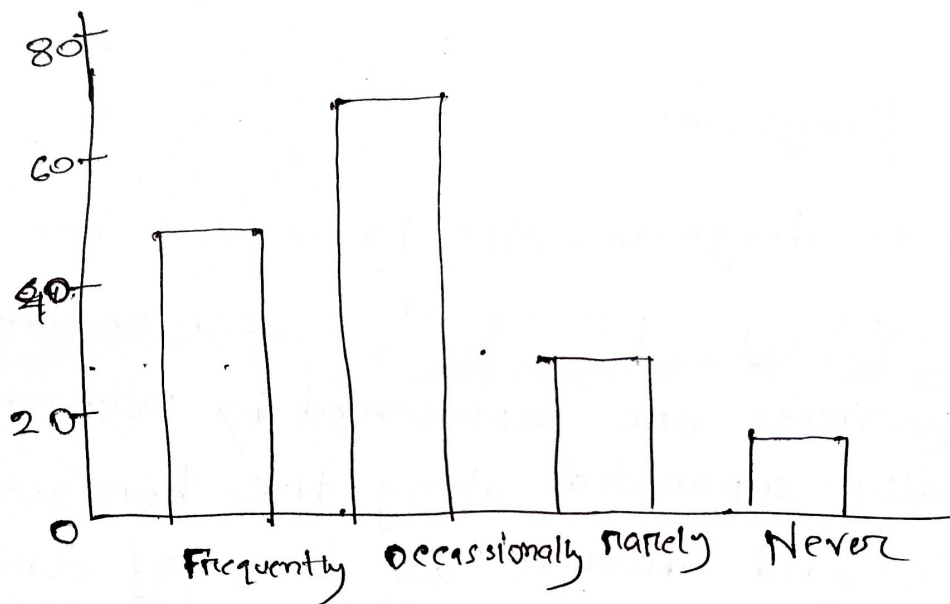Rarely ____ 24
Never — 6
Total ___ 152

Figure: Vertical bar diagram for health centre visit data.

(ii) Pie-diagram or Pie chart:

This is an alternative way to bar diagram. It looks more attractive but requires some knowledge of mathematics for the foundation work to draw this diagram. So we form the relative frequency distribution (%) for this purpose and convert the percent values in angles.

Table: Health centre visit data for constructing pie diagram.

Response	Frequency	Percent relative frequency	Angles of the sector
Frequent	49	$\frac{49}{150} \times 100 = 32.7$	$\frac{49}{150} \times 360 = 117.6$
Occassional	71	$\frac{71}{150} \times 100 = 47.3$	$\frac{71}{150} \times 360 = 170.4$
Rare	24	$\frac{24}{150} \times 100 = 24$	$\frac{24}{150} \times 360 = 57.6$
Never	6	$\frac{6}{150} \times 100 = 4$	$\frac{6}{150} \times 360 = 14.4$
Total	150		

Never
40%

32.7%
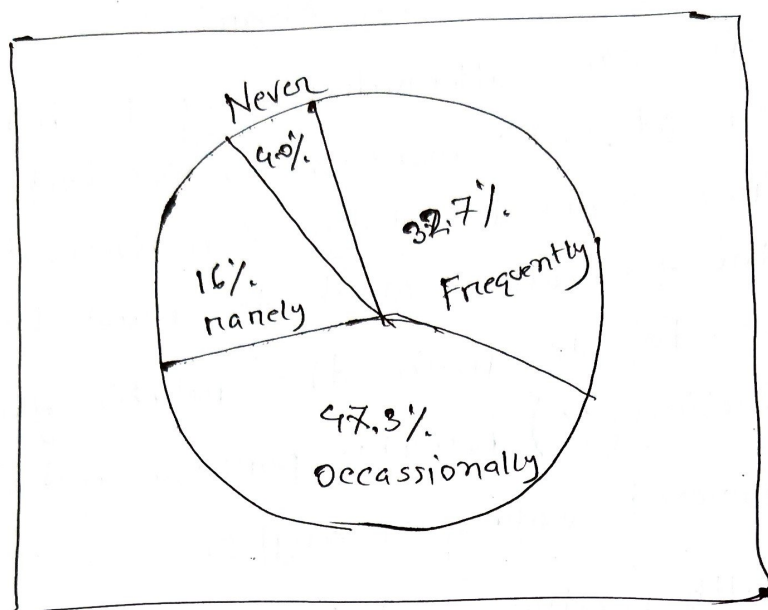Frequently

16%
rarely

47.3%
Occassionally

Figure: Pic-diagram.

Graphical representation of quantitative Data
Important graphs for representing distribution of
quantitative data

i) Dot plot

ii) Histogram.

iii) Frequency polygon

iv) Frequency curve

v) Ogive polygone

vi) Ogive curve

Histogram:

Histogram is one of the most popular and widely used methods for representing a frequency distribution.

In this case, class intervals or class boundaries are plotted along the X-axis and the corresponding frequencies are plotted along with the Y axis and construct adjucent rectangles to get the required histogram.

Frequency distribution of the number of hours worked per months of 50 workers of a factory.

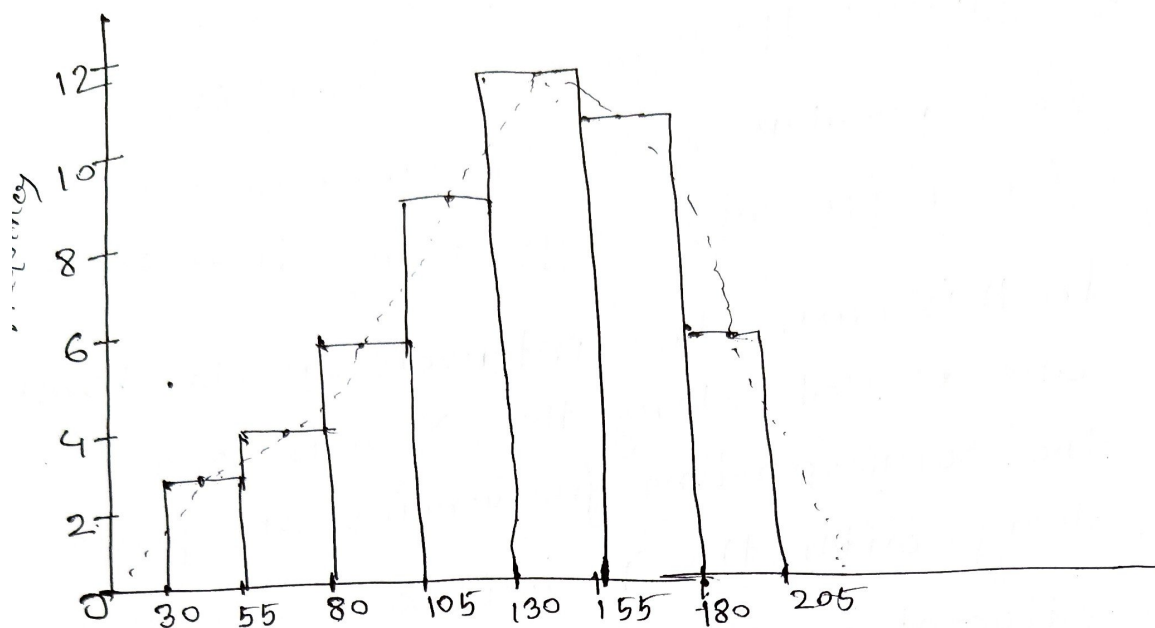| class interval	Frequency
30 - 55	3
55 - 80	4
80 - 105	6
105 - 130	9
130 - 155	12
155 - 180	11
180 - 205	5

Figure: Histogram for number of hours worked.

(ii) Frequency polygon and frequency curve from the frequency distribution.

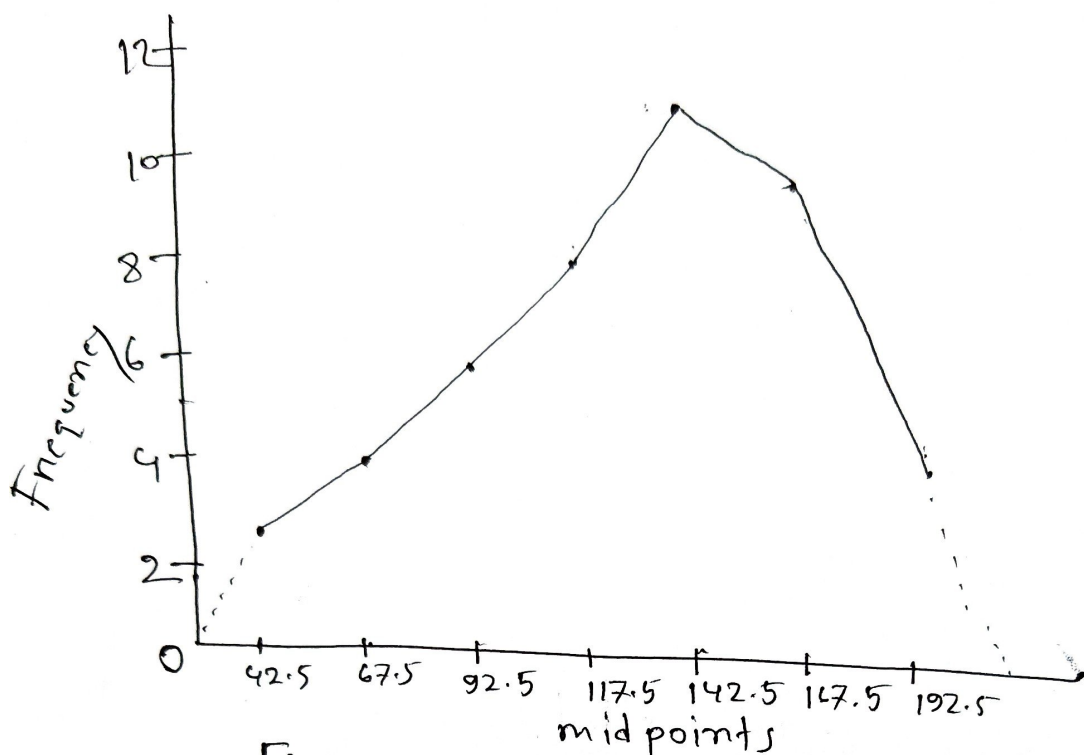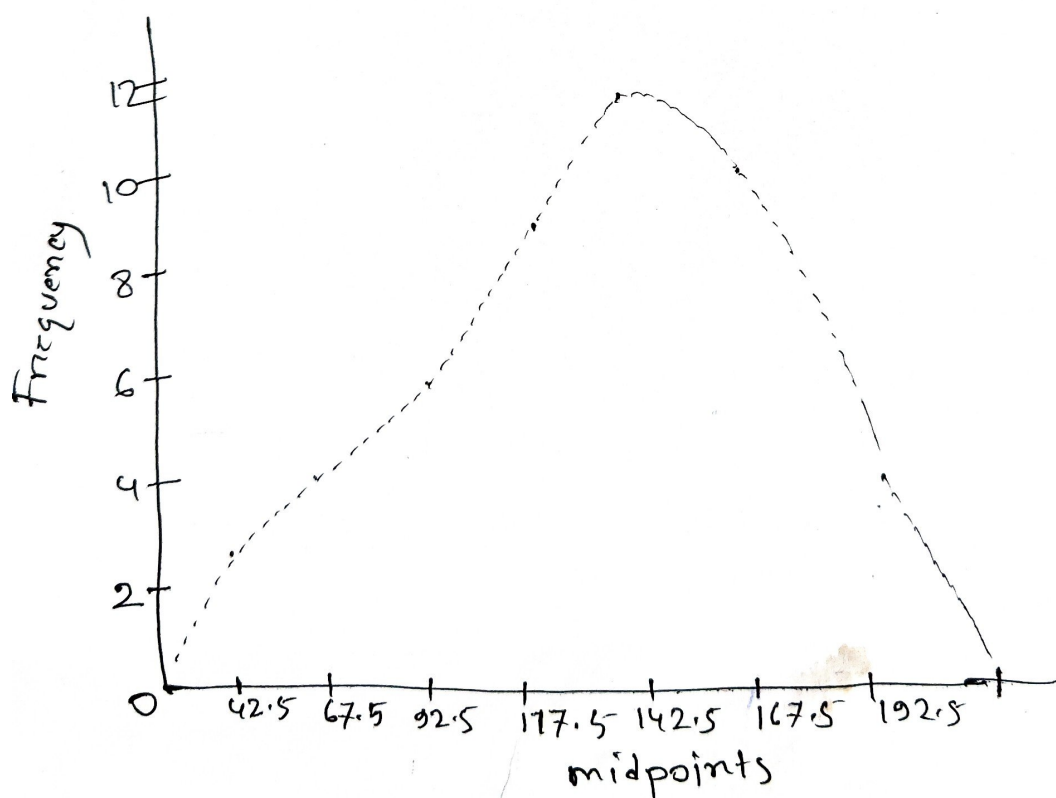| class interval	Frequency	midpoints
30-55	3	42.5
55-80	4	67.5
80-105	6	92.5
105-130	9	117.5
130-155	12	142.5
155-180	11	167.5
180-205	5	192.5

Figure: Frequency polygon from the frequency distribution.

Figure: Frequency curve from frequency distribu