

Displaying Data - Frequency Polygons

After completing this unit, you will be able to:

- Draw Frequency Polygons for discrete data.
- Draw Frequency Polygons for grouped data with equal class intervals.

Some terms you need to know

Discrete data	-	a variable that increases in steps. eg. Shoe sizes can only have the values 5, 5 ½, 6, 6 ½ 7 etc
Continuous data	-	a variable which can have <i>any</i> value along a scale. Eg lengths of feet (which can have any value such as 12.75 cm or 12.99 cm etc.)

Frequency polygons

A frequency polygon is simply a set of points joined up by straight lines.

When to use

Frequency Polygons are used to plot frequencies of data in different classes and are useful to show patterns and trends within the data.

Drawing Frequency Polygons

- Draw a horizontal and a vertical axis.
- The frequency is usually measured against the vertical axis and the values of the variable being measured are shown on the horizontal axis.
- Mark points to show the frequency in each class.
- Connect these points with straight lines to complete the frequency polygon.

Discrete Data

If the data recorded is discrete then you can plot frequency against the class value.

Eg Draw a Frequency Polygon to show the number of trainers sold in this shop, by size.

Shoe Size	Number of Shoes Sold
3	2
3 ½	3
4	3
4 ½	2
5	4
5 ½	5



Continuous Data

If the data recorded is continuous and has been recorded as grouped data with equal class intervals then the frequency should be plotted at the mid point of each class.

Eg Draw a Frequency Polygon to show the number of trainers sold in this shop, by age of customer.

Age of Customer	Number of Shoes Sold
5 - 9	2
10 - 14	4
15 - 19	5
20 - 24	5
25 - 29	3

First identify the mid point of each class.

Age of Customer	Number of Shoes Sold	Mid Point of Class
5 - 9	2	7
10 - 14	4	12
15 - 19	5	17
20 - 24	5	22
25 - 29	3	27

Then plot frequencies at these mid-points.



Self assessment 1 - Drawing Frequency Polygons

1. 75 people were interviewed and asked how many people lived in their household.
The results are given in the table below.

Draw a frequency polygon to illustrate these results

Number of people in household	Number of people
1	11
2	25
3	12
4	16
5	9
6	2

Self assessment 2 - Drawing Frequency Polygons

2. A supermarket recorded the number of items bought by each customer and recorded it in the following table.

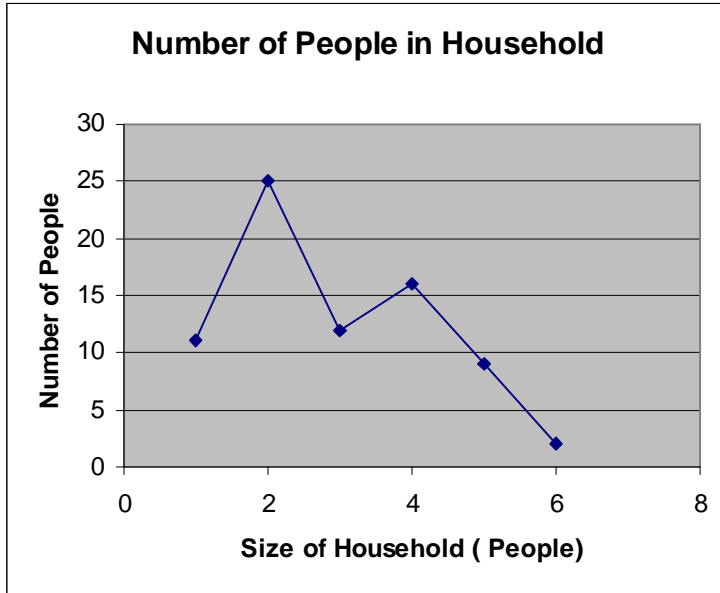
Draw a frequency polygon to illustrate these results

Number of items bought	1 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 45
Number of customers	22	36	52	26	18	6	10

Answers

Self assessment 1 - Drawing Frequency Polygons

1.



2.

Number of items bought	1 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31 - 45
Number of customers	22	36	52	26	18	6	10
Mid Point Value	3	8	13	18	23	28	33

