

## STUDY TIPS

# DATA

## Definitions:

*Population*: the total group of individuals or items.

*Sample*: a group of individuals or items chosen from the population.

*Data*: the information collected from the sample or population.

*Statistic*: a number calculated from the sample data.

*Parameter*: a number calculated from the population data.

## Types of data:

Data may be either *qualitative* (categorical) or *quantitative* (numerical)

- *Qualitative Data* (classified or labelled).  
Data is put into non-numerical categories. Blood type, religion, cause of death, are all examples of qualitative data.
- *Quantitative Data* (counted or measured).  
There are two types of quantitative data.
  - *Discrete Data*: data is put into categories depending on its counted number; for example, the number of children in a family.
  - *Continuous Data*: data is put into categories depending on its measured size; for example, height.

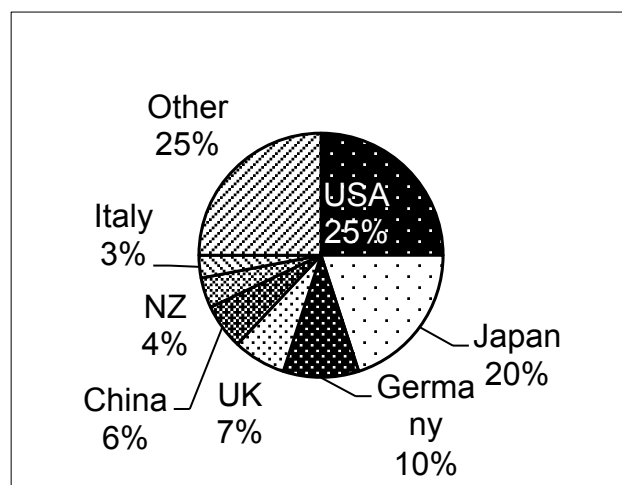
## Graphical Representation

Qualitative/Categorical data is often represented by means of a bar chart or a pie chart.

### Example 1

The table shows the percentage of imports from various countries. This data can be represented on a pie chart so that comparisons are easier:

Country	Imports
USA	25
Japan	20
Germany	10
UK	7
China	6
New Zealand	4
Italy	3
Other	25

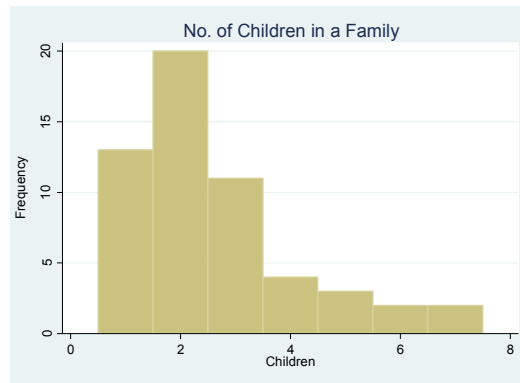


Quantitative/Numerical Data is often represented by means of a frequency bar chart called a histogram.

### Example 2

A group of school students were surveyed to find the number of children in their families. This data can be represented using a histogram.

No. of Children	Frequency
1	13
2	21
3	11
4	4
5	3
6	1
7	1
<i>Total</i>	54



### Exercises

1. Label each of the following as either a categorical or numerical variable. For the numerical variables label each as either discrete or continuous.

- Hair colour
- A person's religion
- A person's height
- Number of children in a family
- The weights of babies born on a particular day
- The number of crimes committed in Victoria each week
- The distance travelled to work by the employees of a large company
- The make of car driven by students at RMIT

2. Represent the data in example 1 in a bar graph.

### Answers

- Categorical
  - Categorical
  - Numerical – continuous
  - Numerical – discrete
  - Numerical – continuous
  - Numerical – discrete
  - Numerical – continuous
  - Categorical

2.

