

## S<sub>2</sub> DATA

### Definitions:

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

**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 labeled).

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.

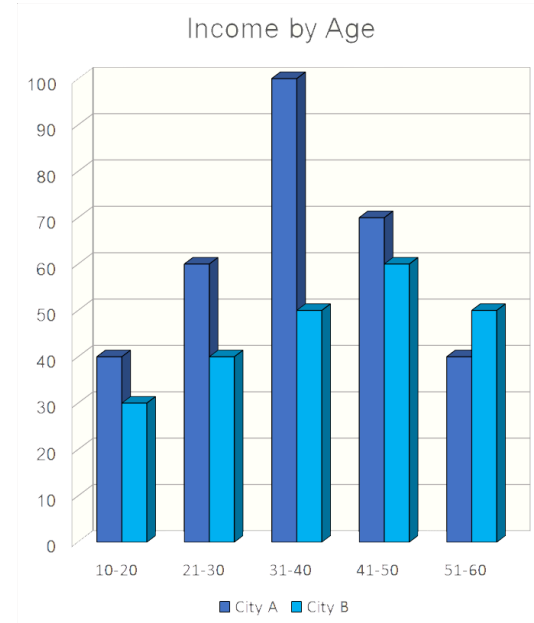
### Graphical Representation of Data

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

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

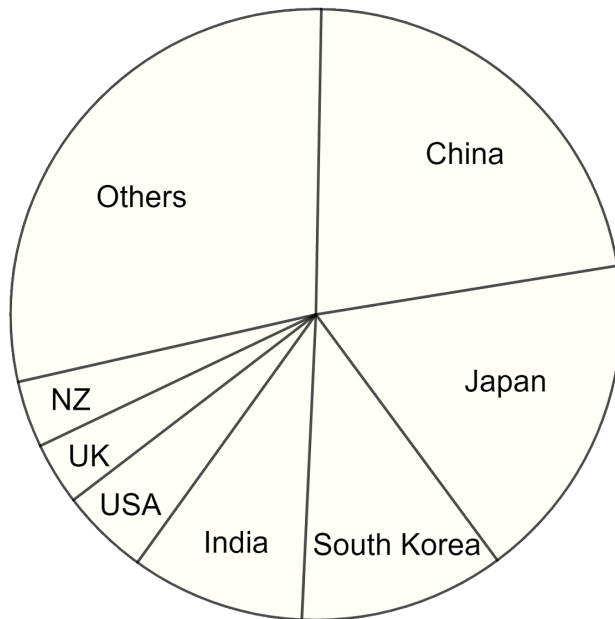
### Examples

1. The table shows the percentage of Australian exports to various countries. This data can be represented on a pie chart so that compar-



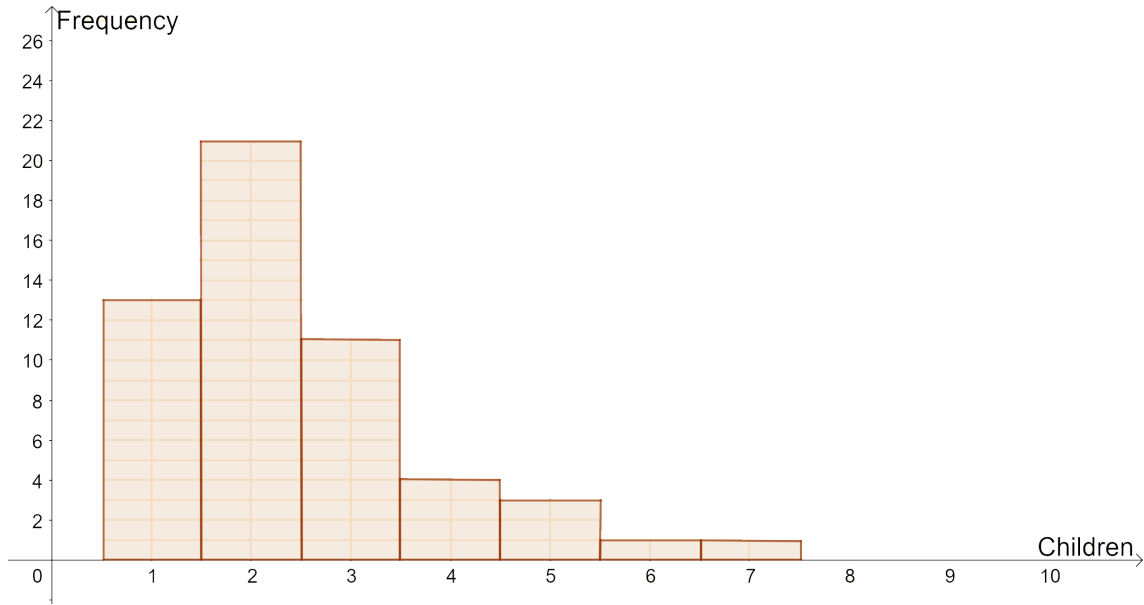
isons are easier.

Country	Imports %
China	22
Japan	20
South Korea	8
India	8
USA	5
UK	4
New Zealand	4
Others	29



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
<b>Total</b>	<b>54</b>



### Exercise 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 traveled to work by the employees of a large company
- The make of car driven by students at RMIT

### Answers

Exercise 1:

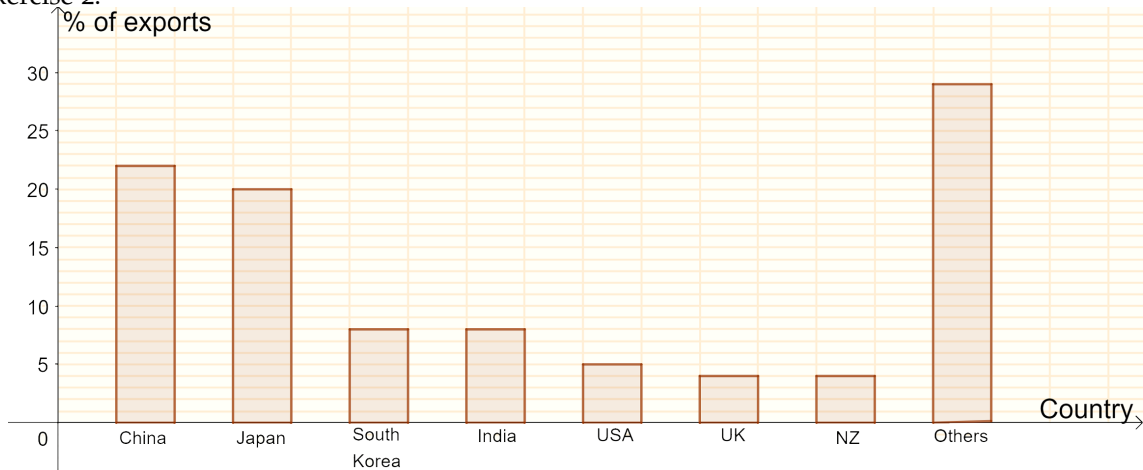
- Categorical
- Categorical
- Numerical – continuous
- Numerical – discrete
- Numerical – continuous
- Numerical – discrete
- Numerical – continuous
- Categorical

*Exercise 2*

Represent the data in example 1 in a bar graph.

*Answers*

Exercise 2:

*Exercise 3*

A group of employees recorded the time that it took them to travel to work on a particular day (see table below). Represent this data using a histogram.

Time in minutes	Frequency
0 - < 15	2
15 - < 30	12
30 - < 45	23
45 - < 60	9
60 - < 75	3
75 - < 90	1
<b>Total</b>	<b>50</b>

*Answers*

Exercise 3:

