12.1

measure of central tendency

- a value that represents the centre of a set of data
- can be the mean, median, or mode

median

- the middle number in a set of data after the data have been arranged in order
- median of 2, 5, 6, 8, and 9 is 6
- median of 1, 3, 6, 8, 9, and 10 is 7

mode

- the most frequently occurring number in a set of data
- mode of 3, 5, 7, 7, and 9 is 7
- modes of 2, 2, 4, 6, 6,
 8, and 11 are 2 and 6
- the data 1, 3, 4, and 5 has no mode

mean

- a measure of central tendency
- the sum of a set of values divided by the number of values in the set
- for example, $Mean = \frac{6+8+4}{3}$ = 6

Key Ideas

- The mode is the most frequently occurring number in a set of data.
 - If no number repeats, there is no mode.

1 2 3 4 5 No mode

- There can be more than one mode.

1 1 2 2 3 Two modes: 1 and 2 (bimodal)

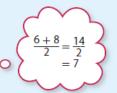
• The median is the middle value in a set of data after the numbers have been arranged in order.

1 2 3 4 8 Median is 3

• If there is an even number of data values, then the median is the value halfway between the two middle numbers.

The median here is the value halfway between 6 and 8, or 7.

• The median does not have to be a number in the set of data.



12.2

Key Ideas

- To calculate the mean, add all of the numbers in a set of data and then divide by the number of numbers.
- The mean does not have to be a number in the set of data.

Mean =
$$\frac{4+6+8+10+6+7+15}{7}$$

= $\frac{56}{7}$
= 8

Key Ideas

- Outliers can affect all measures of central tendency.
- When a small set of data has an outlier, the mean is usually affected more by the outlier than the median.
- Some outliers are just as important as the other data values, while others are better removed from the data set.

12.4

Key Ideas

- Outliers can affect all measures of central tendency.
- When a small set of data has an outlier, the mean is usually affected more by the outlier than the median.
- Some outliers are just as important as the other data values, while others are better removed from the data set.

12.5

Key Ideas

- The mode is the best measure of central tendency for data that represent frequency of choice such as favourite colour, clothing and shoe sizes, or most popular musical group.
- If all the numbers in a set of data are relatively close together, either the median or mean can be used as a measure of central tendency.
- If a data set contains unusually large or small numbers relative to the rest
 of the data, the median is usually the best measure of central tendency.