



## Quick Review

- Different types of graphs have different characteristics. It is important to choose an appropriate graph that best represents a set of data.

This table shows the strengths and limitations of five common types of graphs.

Type of Graph	Strengths	Limitations
Circle Graph	<ul style="list-style-type: none"> <li>• Shows parts of a whole</li> <li>• Shows percents of the total</li> <li>• Sizes of sectors compare parts of the whole</li> </ul>	<ul style="list-style-type: none"> <li>• Does not show data values and the total</li> <li>• Difficult to draw accurately</li> </ul>
Bar Graph	<ul style="list-style-type: none"> <li>• Lengths of bars compare data values</li> <li>• Scale can be used to find the total</li> <li>• Easy to draw</li> </ul>	<ul style="list-style-type: none"> <li>• May be difficult to read depending on scale used</li> <li>• Does not show percents of the total for comparison</li> </ul>
Line Graph	<ul style="list-style-type: none"> <li>• Easy to draw and to read</li> <li>• Shows data changes over time</li> <li>• Can be used to estimate values between or beyond data points</li> </ul>	<ul style="list-style-type: none"> <li>• Does not show parts of a whole</li> <li>• Zig-zag pattern can be difficult to interpret</li> </ul>
Pictograph	<ul style="list-style-type: none"> <li>• Lengths of rows of symbols compare data values</li> <li>• Graph is visually appealing</li> <li>• Key can be used to find the total</li> </ul>	<ul style="list-style-type: none"> <li>• Large number of symbols make it difficult to read</li> <li>• Does not show parts of a whole</li> <li>• Difficult to draw</li> </ul>
Double Bar Graph	<ul style="list-style-type: none"> <li>• Directly compares two sets of data</li> <li>• Lengths of bars compare data values</li> <li>• Scale can be used to find the total of each data set</li> <li>• Easy to draw</li> </ul>	<ul style="list-style-type: none"> <li>• Can only be used to show discrete data</li> <li>• May be difficult to read depending on scale used</li> <li>• Two sets of data in one graph can be confusing</li> </ul>



## Quick Review

- Graphs are a visual way of representing data. However, they can create false impressions by the way they are drawn.

There are many different ways in which graphs can be drawn to **misrepresent data**. Misinterpretation of the data may lead to incorrect conclusions or assumptions.

A wise consumer needs to become aware of the ways in which graphs can be misleading.

This table shows Tamara's math marks in the 4 report cards she has received for this year.

Tamara's brother wants to show that Tamara's performance in math is not steady.

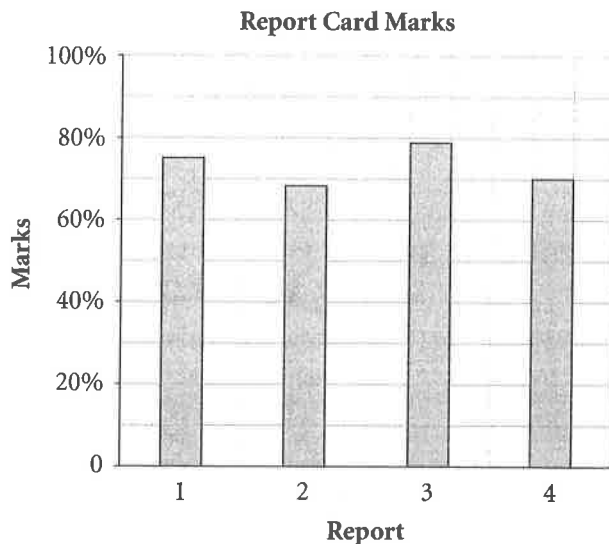
Tamara wants to show that this is not true.

They drew these graphs.

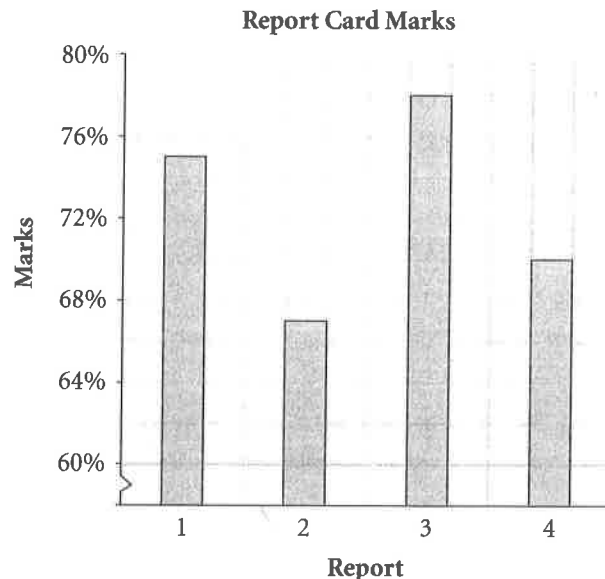
**Report Card Marks**

Report	Marks
1	75%
2	67%
3	78%
4	70%

**Tamara's Graph**



**Tamara's Brother's Graph**



- These are some ways in which a graph can be drawn to misrepresent data.
- Start the scale on the vertical axis of a bar graph at a number other than 0, as in Tamara's brother's graph.
  - Use different size symbols in a pictograph or bars of different widths in a bar graph to make one piece of data appear greater than another.
  - Treat a part of a graph differently to draw people's attention to that piece of data.