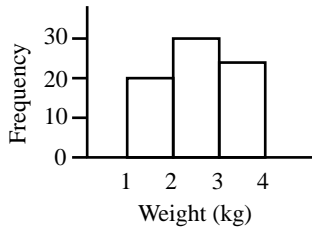


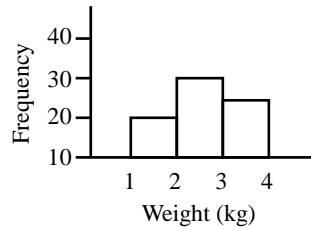
Name: _____ () Class: _____ Date: _____

7.3 Proper Use and Misuse of Statistical Diagrams

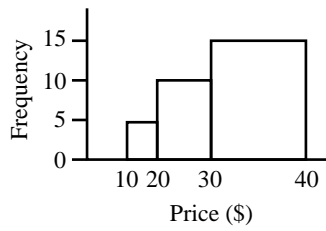
In each of the following, put a '✓' in the appropriate box. (1 – 14)

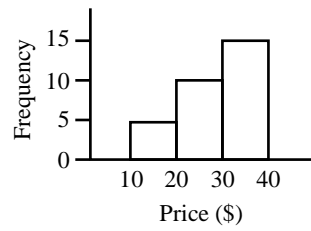
1. The following diagrams are drawn from the same set of data. Which of the diagrams is more suitable for presenting the data?





2. The following diagrams are drawn from the same set of data. Which of the diagrams is more suitable for presenting the data?





3. The following table shows the eye colours of a group of 100 people.

Colours	Percentage
Amber	14%
Blue	43%
Brown	27%
Green	16%

Which of the following is most suitable for presenting the data?

Broken-line graph

Cumulative frequency curve

Histogram

Pie chart

4. The following table shows the distribution of heights of 30 students in Class 2B.

Height (cm)	141 – 150	151 – 160	161 – 170	171 – 180
Frequency	2	10	13	5

Which of the following is most suitable for presenting the data?

- | | |
|--|---|
| <input type="checkbox"/> Broken-line graph | <input type="checkbox"/> Cumulative frequency polygon |
| <input type="checkbox"/> Histogram | <input type="checkbox"/> Scatter diagram |

5. The following table shows the ages and the monthly salaries of 10 interviewees.

Interviewee	A	B	C	D	E	F	G	H	I	J
Age	24	32	27	50	33	46	37	25	32	40
Monthly salary (thousand dollars)	15	24	18	41	22	43	42	21	25	32

Which of the following is most suitable for presenting the data?

- | | |
|--|--|
| <input type="checkbox"/> Broken-line graph | <input type="checkbox"/> Histogram |
| <input type="checkbox"/> Scatter diagram | <input type="checkbox"/> Stem-and-leaf diagram |

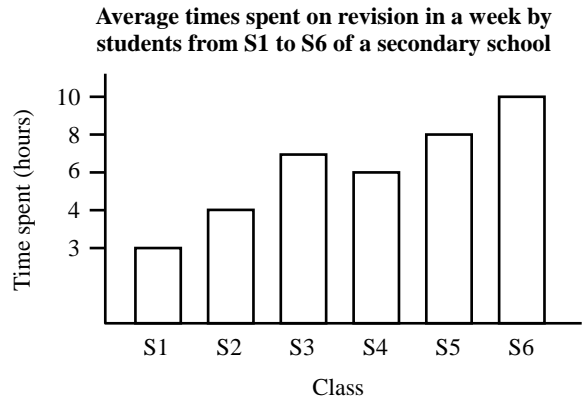
6. The number of visitors of a theme park each month was recorded over the last 24 months. To present the monthly number of visitors during the period with a diagram, which of the following is most suitable for presenting the data?

- | | |
|--|--|
| <input type="checkbox"/> Broken-line graph | <input type="checkbox"/> Histogram |
| <input type="checkbox"/> Pie chart | <input type="checkbox"/> Stem-and-leaf diagram |

7. The graph on the right shows the average times spent on revision in a week by students from S1 to S6 of a secondary school.

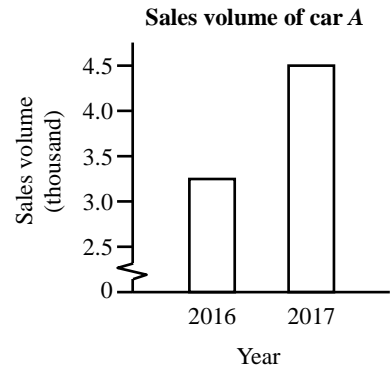
Which of the following statements best explain why a reader could be misled by the graph?

- The scale of horizontal axis is not consistent.
- The scale of vertical axis is not consistent.
- The number of students of each level is not shown in the graph.
- Grid lines are not shown in the graph.



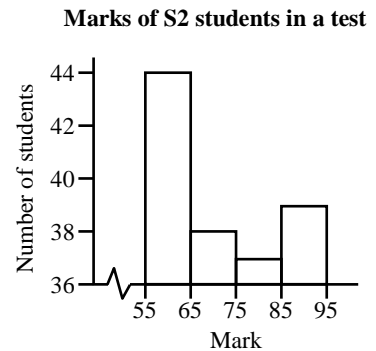
8. A company uses the diagram on the right to show the sales volume of car A in 2016 and 2017. Based on the diagram, Jason concludes that the sales volume of car A in 2017 is twice the sales volume in 2016. Which of the following statements is the best reason that Jason is misled by the diagram?

- The sales volumes of other years are not shown in the diagram.
- The sales volumes of other companies are not shown in the diagram.
- The vertical scale starts from 0.
- The heights of the bars are not proportional to the sales volumes.

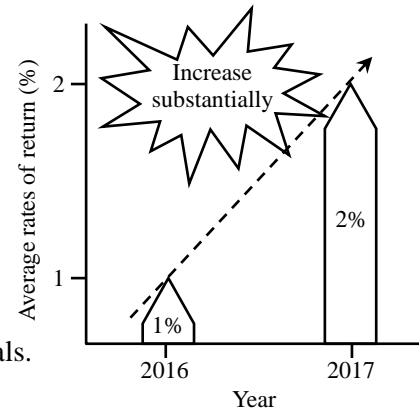


9. The diagram on the right shows the marks of S2 students in a test. Based on the diagram, Iris believes that the marks of more than half of the S2 students are between 55 marks and 65 marks. Which of the following statements is the best reason that Iris is misled by the diagram?

- The full marks of the test are not shown in the figure.
- The scales on the vertical axis are not expressed in percent.
- The vertical scale does not start from 0.
- The total number of S2 students is not stated in the title.

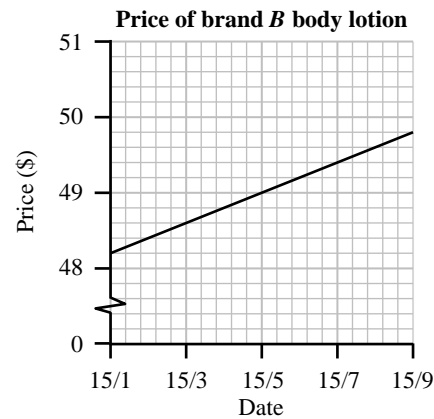
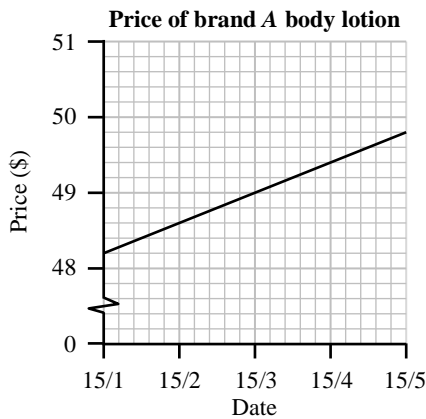


10. An advertisement for an investment company uses the graph on the right to show the average rates of return in 2016 and 2017. Which of the following statements is the best explanation as to why readers could be misled by the advertisement?



- The investment amount is not shown.
- The average rates of return in other years are not compared.
- The average rates of return (in %) are not expressed in decimals.
- The vertical scale does not start from 0.

11. The diagrams below show the prices of two brands A and B of body lotions in 2016.

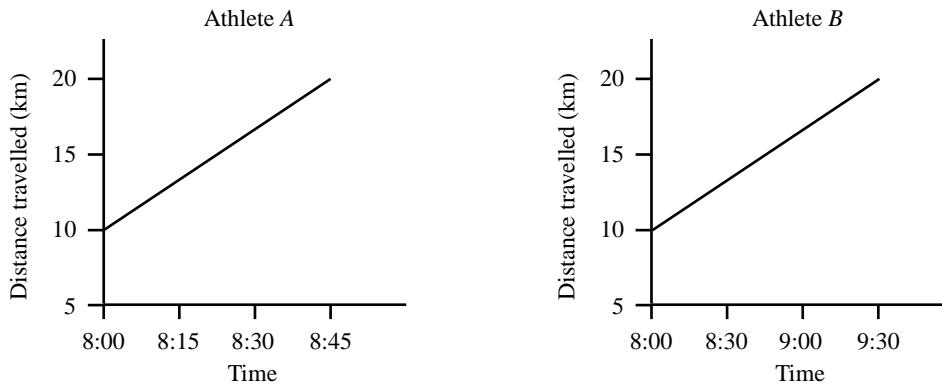


Based on the diagrams above, Joyce believes that the prices of the two brands of body lotions are increasing at the same rate.

Which of the following statements is the best reason that Joyce is misled by the above diagrams?

- The number of customers buying brand A body lotion and that of brand B body lotion are not shown.
- The scales of the 2 horizontal axes are not the same.
- The scales of the 2 vertical axes are not the same.
- There is no comparison of the prices of other brands of body lotions.

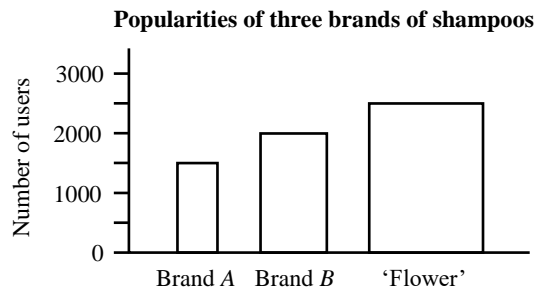
12. The following graphs show the distances travelled by athlete *A* and athlete *B* respectively. According to the graphs, Fiona concludes that the running speeds of athlete *A* and athlete *B* are the same.



Which of the following statements is the most likely reason that Fiona is misled by the above graphs?

- There is no comparison of the graphs of other athletes.
- The scales of the 2 horizontal axes are not the same.
- The scales of the 2 vertical axes are not the same.
- The scales on the 2 vertical axes do not start from 0.

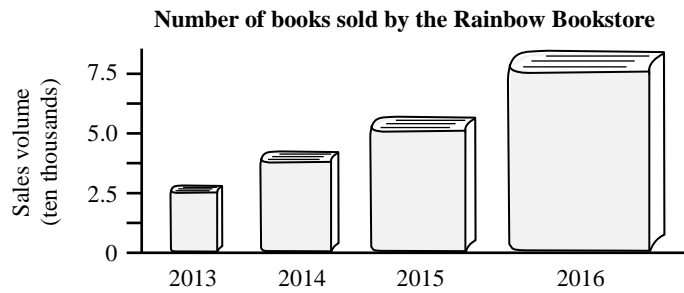
13. The following is an advertisement comparing the popularities of 'Flower' Shampoo and other brands in a market study.



Which of the following statements is the best explanation as to why readers could be misled by the advertisement?

- The number of people interviewed in the market study is not enough.
- The scale of the vertical axis is not consistent.
- The bars do not evenly spaced.
- The bars do not have the same width.

14. The diagram below shows the number of books sold by the Rainbow Bookstore from 2013 to 2016.



Based on the diagram above, Sandy concludes that the sales volume of the Rainbow Bookstore in 2016 is approximately 9 times the sales volume in 2013.

Which of the following statements is the best reason that Sandy is misled by the above graph?

- The number of books sold in other years is not shown.
- The number of books sold by other bookstores is not compared.
- The scales on the vertical axis are not expressed in integers.
- The areas of the figures in the diagram are not proportional to the sales volume.