Chapter 1 Gifted and Enrichment Answers

1. a) For each pizza topping in the first graph, about twice as many people surveyed for Data A chose it as people surveyed for Data B. For each pizza topping in the second graph, about the same percent of people surveyed for Data A chose it as people surveyed for Data B.

b) The number of people surveyed for Data A was more than double the people surveyed for Data B. So, you would expect Data A bars to be taller when the bar heights are determined by number of people. However, 30 out of 65 people and 14 out of 30 people are very close percents as are the numbers of each other topping. So, you would expect the bar heights to be close for each topping when the heights are determined by percent of people.

c) Example: Perhaps; if we surveyed the same number of people (unlike in the pizza topping surveys) and the people we surveyed had similar ideas (as in the pizza topping surveys), then we would draw the same conclusion. However, if we surveyed quite a different number of people (as in the pizza topping surveys) and/or the two groups of people we surveyed had dissimilar ideas (unlike in the pizza topping surveys), then we would be more likely to draw different conclusions.

2. a) Arrange test marks in order from least to greatest.
The lowest mark is 24. The highest mark is 64. There are 24 marks.
The two middle marks are 39 and 41.
(39 + 41) ÷ 2 = 40 The median is 40.

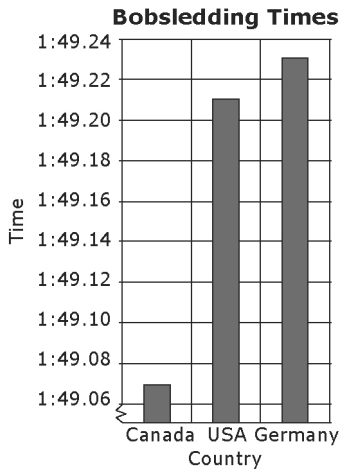
b) There are 12 marks above 40. The two middle marks are 56 and 58.
(56 + 58) ÷ 2 = 57 This median is 57.
There are 12 marks below 40. The two middle marks are 29 and 33.
(29 + 33) ÷ 2 = 31 This median is 31.

c) Example: Those five numbers were plotted as points above a number line. A line segment was drawn from each endpoint to the point next to it. A box was made between those points. A vertical line segment was drawn in the box though the median point.

d) Example: The upper quartile is the median of the marks above the median. So half of half the marks or one quarter of the marks are above it; thus quartile. It is in the upper part; thus upper. Similarly for the lower quartile.

e) Examples: Advantages—it shows 5 important values, it gives a visual spread of the data, it is simple to draw. Disadvantages—you cannot see individual marks, it is not as visually appealing as some other graphs.

3. a) Example:



b) Example: I used a vertical scale that increased by 0.02 s. From the heights of the bars, my graph shows that the USA team took about 8 times as long as the Canadian team did and the German team took about 9 times as long.

4. Example: A circle graph of the number of each different type of shoes sold to see which type they sell the most of and the least of; a bar graph of the number of each size of shoes to see which size they sell the most of and the least of; a line graph to show the selling price plotted again number sold to see if selling price affects sales

5. Example: A circle graph of the number of people in various age groups to see the relative number of people in each age group; a double bar graph of the number of people in various age groups by gender to see the actual number of males and female in each age group