Multiple Choice

For questions 1 to 4, select the correct answer.

1. Which of the following is the best choice for displaying trends in data?

A circle graph
B bar graph
C pictograph
D line graph

Use the data for questions 2 to 4.
Greg recorded the number of hours he spent watching television each day last week.

3, 2, 1, 0.5, 1, 6, 4

2. What is the mean of the number of hours Greg spent watching television?

A 1
B 1.5
C 2
D 2.5

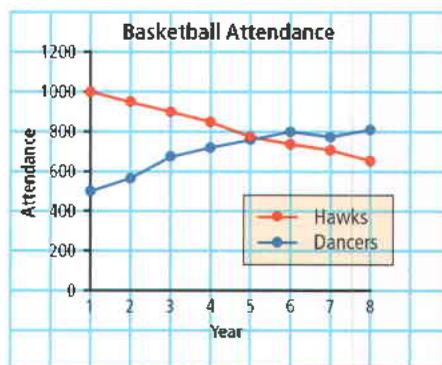**3.** What is the mode of the number of hours Greg spent watching television?

A 1
B 1.5
C 2
D 2.5

4. What is the median of the number of hours Greg spent watching television?

A 1
**B** 1.5
C 2
D 2.5

Short Answer

5. The graph shows game attendance for two basketball teams.

a) Describe the trend for each team's game attendance.
b) Predict the attendance for each team's next game.

6. Parents at a children's soccer game are asked to fill out a survey. The results will be used to pick players for an all-star game.

a) Describe the possible bias in this survey.
b) How could the bias be removed?

7. The company that makes Bubbles pop used the graph shown in an advertisement.
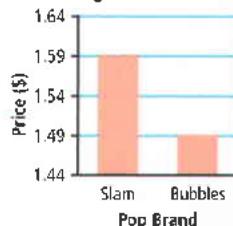
a) Is the graph misleading? Explain.
b) How do you think the company will benefit from this ad?

Extended Response

8. A group of teens worked for a farmer one day, picking cherries. The number of baskets each teen picked is recorded in the table.

Number of Baskets	Tally	Frequency
9	l	1
10	l	**1**
11	llll	4
12	ll	2
13		0
14	l	1

a) How many teens were picking cherries?
b) How many baskets did these teens pick, in total?
c) Estimate how many more workers the farmer should hire to get a total of 150 baskets per day. Explain your thinking.

9. Rena collected the mathematics test scores from 11 of her friends and added her own. This is the data set she collected. The test was out of 85.

66   80   68   72   75   64
81   73   73   74   75   75

a) Use a frequency table to describe the data set.
b) Rena received the mean score. What mark did she get?
c) Find the other two measures of central tendency.

10. Explain how a graph can be used to mislead the viewer. Create your own data and misleading graph to support your answer.

Chapter Problem Wrap-Up

You are the publisher of a magazine for students in grades 7 to 9. You need information to help you plan the magazine covers for future issues.

1. Design a reader survey.

2. Collect, organize, and display data from possible readers.

3. Analyse the data you have collected. What decisions might you make? Explain why.

Chapter 10

1. **Answer: D** — line graph
2. Mean = (3 + 2 + 1 + 0.5 + 1 + 6 + 4) ÷ 7 = 17.5 ÷ 7 = **2.5 Answer: D**
3. Mode = number that appears most often, 1 appears twice **Answer: A**
4. Order the data: 0.5, 1, 1, 2, 3, 4, 6 Middle number = **2 Answer: C**
5. **Ans:**
   a. Hawks: Attendance is decreasing over time. Dancers: Attendance is increasing over time.
   b. Prediction for next game: Hawks: About **600** (continue downward trend), Dancers: About **850** (continue upward trend)
6. **Ans:**
   a. Possible bias: Only parents at the game are surveyed. They may vote for their own children.
   b. Remove bias by: Surveying a wider group (coaches, referees, or multiple games).
7. **Ans:**
   a. Yes, it is misleading. The vertical axis is truncated (starts around 1.44 instead of 0), exaggerating the price difference.
   b. The company benefits by making their product appear much cheaper than the competitor.
8. **Ans:**
   a. Table frequencies: 9 → 1, 10 → 1, 11 → 4, 12 → 2, 13 → 0, 14 → 1
      Total teens = 1 + 1 + 4 + 2 + 0 + 1 = **9 teens**
   b. Total baskets: (9×1) + (10×1) + (11×4) + (12×2) + (14×1) = 9 + 10 + 44 + 24 + 14 = **101 baskets**
   c. Average per worker = 101 ÷ 9 ≈ 11 baskets, 150 ÷ 11 ≈ 14 workers needed. They have 9 workers, so about **5 more workers** are needed.
9. Data set: 66, 80, 68, 72, 75, 64, 81, 73, 73, 74, 75, 75
   a. Frequency table: 64 → 1, 66 → 1, 68 → 1, 72 → 1, 73 → 2, 74 → 1, 75 → 3, 80 → 1, 81 → 1, 11 students wrote the test with marks ranging from 64 to 81 out of 85.
   b. Mean: Total = 64 + 66 + 68876, 876 ÷ 12 = **73,** Rena scored **73**.
   c. Other measures: Ordered list: 64, 66, 68, 72, 73, 73, 74, 75, 75, 75, 80, 81 Median = (73 + 74) ÷ 2 = **73.5,** Mode = **75**
10. Graphs can be used to mislead viewers by showing different areas that make your product look positive and the competitors negative. Additionally, as seen in Q7, truncation can be used to blow up proportions.