Review 2
Answer Section

1. B
2. D
3. A
4. B
5. B
6. B
7. A
8. C
9. C
10. C
11. C
12. A

COMPLETION

13. mode
14. response
15. the population
16. a deviation
17. outliers
18. measurement
19. Percentiles
20. the standard deviation
21. median
22. measures of spread or measures of dispersion
23. continuous
24. discrete
25. sampling
26. Quartiles
27. the variance
28. z-score
29. The interquartile range
30. mean
31. non-response

MATCHING

32. A
33. D
34. C
35. B
36. A
37. A

38. C
39. C
40. B
41. A

SHORT ANSWER

42. $\bar{x} = 45.7$, $s = 15.1$, $s^2 = 229$
43. Yes. Examples may vary. Half-sizes for shirts and shoes are two everyday examples.
44. mean 22, median 25, mode, 28
45. ANS:
a) either all people who own TVs or just those who are watching TV at the time the program is on
b) all members of the party
c) people who are teenagers now
d) adult Ontario residents who use toothbrushes
46. ANS:
You and your financial planner have interpreted the word typical differently. The planner was referring to the mode of the minimum investment amounts, while you calculated the mean.
47. range $110, interquartile range $30
48. ANS:
a) 1.13
b) –0.24
49. ANS:
a) –0.33
b) –0.0082
c) 3.85
50. median $30, first quartile $20, third quartile $50
51. $\bar{x} = \$35.18$, $s = \$22.02$, $s^2 = 485$
52. ANS:
A bar graph is any graph in which values are represented by the height or area of a bar. A histogram is a special type of bar graph in which the areas of the bars are proportional to the frequencies of the values in a set of data. Histograms are used for variables whose values can be arranged in numerical order, while bar graphs can represent frequencies of either numerical or categorical variables.
53. ANS:
Response bias occurs when respondents give false answers; non-response bias occurs when particular groups in the population tend not to participate in the survey.
54. 23
55. ANS:
a) The 25–34 age group had the most accidents.
b) Make all the intervals the same width by combining the data for drivers from 16 to 24.
c) The combined 16–24 interval had more accidents than any other interval with the same width.
d) You do not know how many drivers are in each age group.

56. ANS:
Answers will vary. Here are two simple examples:
a) A survey conducted by e-mail will miss households that do not have computers.
b) If a telephone survey is conducted only in English, people who do not speak it fluently might choose not to participate.
57. ANS:
loaded questions
a) Which is less damaging to the environment: nuclear power or hydro-electric power?
b) Can fast food be nutritious?
58. ANS:
leading questions
a) Which tastes better, cola A or cola B? Why?
b) Why is skiing Canada's favourite winter sport?
59. ANS:
a) systematic sample
b) simple random sample
c) cluster sample
d) stratified sample

PROBLEM

60. ANS:
a) Yes, although the probability is quite low.
b) Answers will vary. Since male students could well have different interests than female students do, such a sample probably would not be representative.
61. ANS:
Answers may vary. Students could suggest randomly selecting several classes and then surveying some or all members of each class.