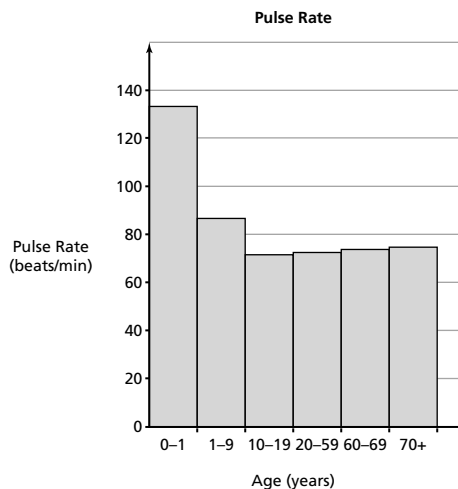
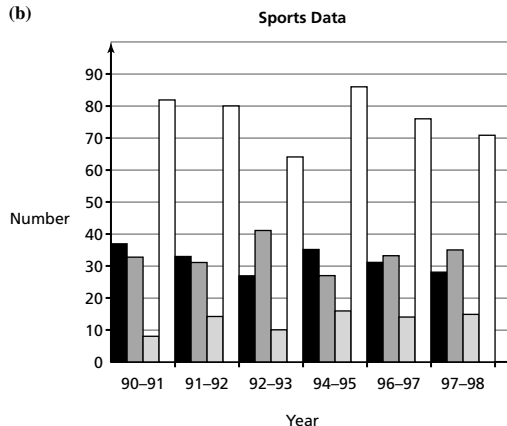


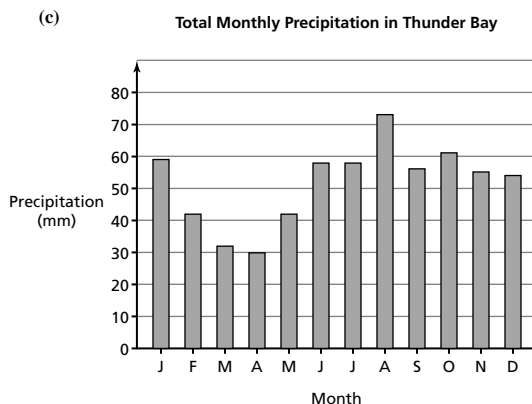
3. (a)



(b)



(c)



4. (a) no

(b) You need the average consumption from other countries.

(c), (d) The daily average water consumption, excluding water used by agriculture and industry, is higher in North America than in Switzerland, U.K., Nigeria, West Germany, Belgium, and India combined, which the writer misidentified.

(e) Research the consumption from other countries.

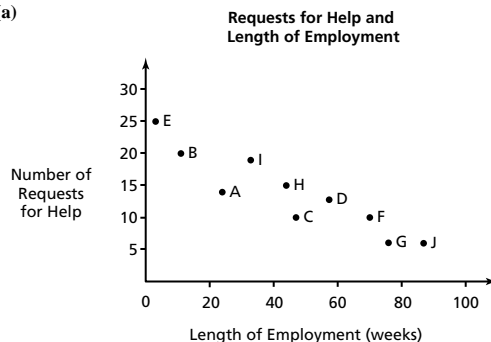
5. (a) $y = 3.2485x + 4.1394$

(b) Answers may vary, e.g.: Mass = $\frac{10}{3} \times \text{age} + \frac{11}{3}$

(c) Answers may vary, e.g.: 57 kg

(d) Mass = $3.2485 \times \text{age} + 4.1394$. Mass of a 16-year-old boy: 56.12 kg; $r = 0.962\,374$, confident

6. (a)



(b) less often

7. (a) $y = -0.0335x + 8.4679$

(b) Strong negative correlation; Yes, this is expected. A car will operate more efficiently at a moderately quick speed.

8. (c) Answers will vary; for example: $y = 0.411\,429x + 0.642\,857$

(d) 25; 21 using line of best fit. Close because answers are close each time, but different.

9. (a) Average wage per hour implies making the same income across Canada, but pay is very different when you work less hours.

(b) No, this impression is not accurate.

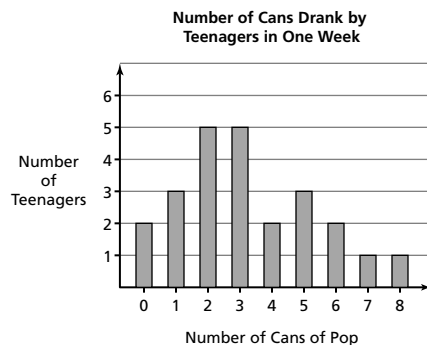
(c) Add another graph showing total yearly income across Canada.

Chapter 1 Test, page 71

1. (a) Yes, students think Math teachers are nerds. No, because kids were asked to draw mathematicians, not math teachers.

(b) There is a misconception that mathematicians (and intelligent people, in general) are nerds.

2. (a)



(b) A frequency table would be quicker.

3. (a) $y = 0.1357x + 0.7714$

(b) Mass = $0.135\,724\,85 \times \text{age} + 0.7714$

(c) 2.13 kg

(d) strong positive correlation

4. (a) no correlation

(b) strong correlation; more rainfall helps vegetation grow

(c) strong correlation; more mass means higher fuel consumption

5. (a) 4 5 8 9

5 1 2 4 5 5 6 7 7 8 9

6 0 1 2 2 3 7 8

7 1 5

(b) 6 games

(c) 18.2%

(d) In only 9% of the games did the team score more than 68 points. It is not very likely.

6. (a) $y = 96.019x + 670.53$
 (b) Mass of heart = $96.019 \times \text{mass of the cat} + 670.53$ using TI-83 Plus calculator or computer spreadsheet software
 (c) The mass of the heart increases as the mass of a cat increases.
 (d) No, because it is not a good fit.
7. No, because it appears that taxes have quadrupled.
8. (a) Using a vertical scale from 0 to \$1000 would make the differences between Carrie and Musinta seem smaller.
 (b) Using a vertical scale from \$390 to \$710 would make her sales figures seem to be increasing more than they are.
9. (a) 16.8% (b) 67.2%
 (c) 86.5% (d) 19.4%
 (e) 25.0% (f) 100%
10. (a) The picture for January 1984 is many times smaller than the one for February 1983, but unemployment only dropped from 10.5% to 8.0%.
 (b) No, this impression is not accurate.
 (c) Extending the vertical to 0 will fix the inaccuracy.

Chapter 2

2.1 Exercises, page 81

1. (a) preparing for a camping trip: packing, shopping list, drive, sleeping bag, sunscreen; things done on the camping trip: unpack, canoe, relax, swim, sleep, eat, bug bite, picnic
 (b) things you do in a car: steer, shift, push, pull, turn; parts of a car: pedal, wheel, brake, tire, dial, seat, switch, window, radio
 (c) parts of a computer: hard drive, mouse, CD-ROM, keyboard, cable, monitor; things to do with a computer: type, click, download, read, play, record, save, load, plug-in
 (d) things to do in the backyard: dig, plant, prune, water, clip, harvest, garden; things you use in the backyard: seeds, hose, hoe, shovel, fertilizer
 (e) things you do before work: wake up, shower, breakfast, drive; things you do during the day at work: copier, phone, meeting, fax, lunch, break
 (f) actions in a hockey game: slashing, face off, skate, shoot, save; objects related to hockey: ref, blue line, puck, fans, goalie, forward, defence, net
4. (a) estimation of height and distance, person's height; person's age, actual height, actual distance
 (b) females' estimate of size of crowd, males' estimate of size of crowd, actual size of crowd
 (c) quality of a person's clothing, mid-term average
 (d) mid-term average in all subjects, favourite subject
5. Answers may vary; for example: (a) estimation of height and distance 1, person's height 1, person's age 1, actual height 1, actual distance 1 (depends on the object)
 (b) females' estimate of size of crowd 1, males' estimate of size of crowd 1, actual size of crowd 8
 (c) quality of a person's clothing 6, mid-term average 1
 (d) mid-term average in all subjects 1, favourite subject 1
2. (a) discrete (but could be continuous)
 (d) continuous (g) continuous (h) discrete (i) discrete
3. (a) weather conditions: qualitative; absenteeism: quantitative, discrete (but could be continuous); population: Grade 9 students in our school
 (b) profiles: qualitative; population: people who buy used cars in Canada
 (c) amount of television: quantitative (measured in minutes); discrete; physical fitness: quantitative, continuous; population: adult females
 (d) average number of breakfast meals eaten: quantitative, discrete; grades: quantitative, continuous; population: Grade 9 students
 (e) number of female students with speeding tickets: quantitative, discrete; number of male students with speeding tickets: quantitative, discrete; population: teenagers who have been issued speeding tickets
 (f) home conditions: qualitative; population: school-aged children
 (g) time of day: quantitative, discrete; number of available parking spaces: quantitative, discrete; population: shoppers who drive to the local mall
 (h) amount spent on clothes: quantitative, discrete; amount of money student earns: quantitative, discrete; population: students at our school
4. (a) sample, longitudinal (b) sample, cross-sectional
 (c) sample, longitudinal (could be cross-sectional)
 (d) sample, longitudinal (e) sample, cross-sectional
 (f) sample, cross-sectional (could be longitudinal)
 (g) sample, longitudinal (h) sample, cross-sectional
5. (a) (i) school environment club
 (ii), (iii), (iv) quantity for each T-shirt size: quantitative; discrete
 (b) (i) electors in a district
 (ii) level of support: qualitative
 (c) (i) plants on 45 hectares of land
 (ii) plant species: qualitative; number of species / ha: quantitative; discrete
 (d) (i) native community on Manitoulin Island
 (ii) family structure during the last century: qualitative
 (e) (i) present and former staff and students, parents and interested community members
 (ii) new names for the school: qualitative
 (f) (i) teenagers today and 20 years ago
 (ii) economic situation of teenagers today: qualitative; economic situation of teenagers 20 years ago: qualitative
6. (a) (i) census (ii) cross-sectional
 (b) (i) sample (ii) cross-sectional
 (c) (i) census (ii) cross-sectional
 (d) (i) sample (ii) longitudinal
 (e) (i) sample (ii) cross-sectional
 (f) (i) sample (ii) longitudinal
9. (i) (a) cross-sectional (b) longitudinal
 (c) longitudinal (d) cross-sectional
 (e) longitudinal (f) cross-sectional
 (ii) The population in each case is very large so a census would be difficult to obtain.
10. (a) all the integrated circuits at a manufacturing plant
 (b) integrated circuits selected by the quality-control officer

2.2 Exercises, page 89

1. (a) quantitative (b) qualitative (c) qualitative
 (d) quantitative (but could be qualitative)
 (e) qualitative (f) qualitative (g) quantitative
 (h) quantitative (i) quantitative (j) qualitative