6. **(a)** $y = 96.019x + 670.53$
(b) Mass of heart = 96.019 × 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

2.2 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

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