

5. a)

Month	Balance	Payment	Interest	Principal	New Balance
February	1000.00	88.88	5.00	83.88	916.12
March	916.12	88.88	4.58	84.30	831.82
April	831.82	88.88	4.16	84.72	747.10
May	747.10	88.88	3.74	85.14	661.96
June	661.96	88.88	3.31	85.57	576.38
July	576.38	88.88	2.88	86.00	490.39
August	490.39	88.88	2.45	86.43	403.96
September	403.96	88.88	2.02	86.86	317.10
October	317.10	88.88	1.59	87.29	229.80
November	229.80	88.88	1.15	87.73	142.07
December	142.07	88.88	0.71	88.17	53.90
January	53.90	88.88	0.27	88.61	-34.71

In the spreadsheet, cell D2 contains the formula  $0.005*B2$ , cell E2 contains the formula  $C2-D2$ , cell F2 contains the formula  $B2-E2$ , and cell B3 contains the formula F2. These cells are copied down to 12 months.

- b) A final payment of \$88.88 overpays the loan by \$34.71 and so the final payment is  $\$88.88 - \$34.71 = \$54.17$ .
- c) Highlight the balance column, and from the Insert menu, select Chart. From this menu, select line graph.
6. Answers may vary.
7. Use the TI-83 Plus:  $\text{randInt}(1, 50)$ ; use a spreadsheet function such as  $\text{INT}(\text{RAND}()*51)$ ; write the integers from 1 to 50 on equal-sized slips of paper and draw slips at random from a hat, replacing the slip after each draw.
8. b) 4 colours
9. a) No; more than two vertices have an odd degree.  
b) Pinkford-Brownhill-Whiteford-Redville-Blueton-Greenside-Blacktown-Orangeton-Pinkford
10. Yes; there are exactly two vertices with an odd degree (in the associated network diagram)
11. a)  $4 \times 3$       b) 9      c)  $a_{12}$   
d) No; the inner dimensions do not match.
12. a)  $\begin{bmatrix} 10 & 9 \\ 19 & -5 \end{bmatrix}$       b) not possible      c) not possible  
d)  $\begin{bmatrix} 22 & 70 \\ 20 & 40 \\ -11 & -35 \end{bmatrix}$       e)  $\begin{bmatrix} 8 & 5 & -4 \\ -2 & 0 & 1 \end{bmatrix}$
13. \$4175

## CHAPTER 2

### Review of Prerequisite Skills, p. 90

1. a) \$79    b) \$16.99    c) \$479    d) \$64.69  
2. a) \$13.50/h      b) \$0.83  
3. 30%  
4. \$188.89  
5. a) mean: 25.8, median: 26, mode: 26  
b) mean: 21, median: 21, mode: no mode  
c) mean: 20.3, median: 18, mode: 10, 18  
d) mean: 43.2, median: 41, mode: 70  
e) mean: 242.2, median: 207.5, mode: no mode  
f) mean: 33.2, median: 33.5, mode: 32  
6. a) approximately \$1.44      b) 1997  
c) yearly increases in price  
d) 10.4%    e) domain: {1996–2001}, range: {1.44–1.59}

### Section 2.1, pp. 101–103

#### Practise

1. a) Some intervals have common endpoints; a 38-year-old could be placed in either of two intervals.  
b) The intervals 81–85 and 86–90 are omitted.
2. a) bar graph      b) histogram      c) bar graph  
d) histogram
3. b) 19.4%      c) Answers will vary.  
d) Less than 50% of the respondents order red meat.
4. Answers will vary.

#### Apply, Solve, Communicate

5. a) 53      b) size: 5; number 11

c)

Score	Tally	Frequency
39.5–44.5		3
44.5–49.5		1
49.5–54.5		2
54.5–59.5		4
59.5–64.5		2
64.5–69.5		2
69.5–74.5		2
74.5–79.5		5
79.5–84.5		2
84.5–89.5		1
89.5–94.5		3

- g) Frequency polygon: shows the changes in frequency from one interval to the next. Relative frequency polygon: shows the changes in frequency relative to the total number of scores. Cumulative frequency: shows the rate of change of frequency from one interval to the next and the total number of scores.