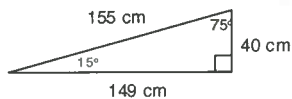
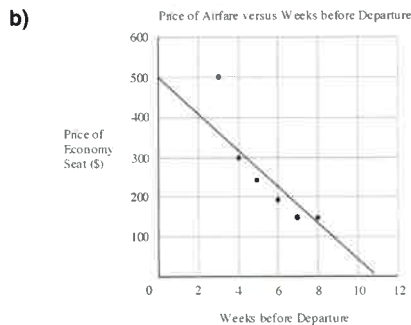
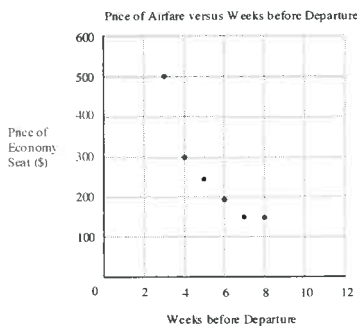


Cumulative Review Chapters 1–8, page 530

1. a) $\angle X \doteq 40^\circ$
b) $\angle L \doteq 41^\circ$
2. a) About 155 cm, about 149 cm



3. a) About 20° or about 160°
b) About 24° or about 156°
c) About 157°
d) About 139°
4. a) $l \doteq 2.57$ m, $k \doteq 0.71$ m; $\angle S = 54^\circ$
b) $\angle F \doteq 82^\circ$, $\angle G \doteq 49^\circ$, $\angle E = 49^\circ$
5. About 330 km
6. About 464.3 cm²
7. $SA \doteq 39$ sq. ft.
8. About 20 ft.
9. a) Cube with edge length 7 m
b) 343 m³
10. The cylinder has radius about 3.55 in. and height about 7.1 in.
11. a) One-variable data
b) Two-variable data
12. a)

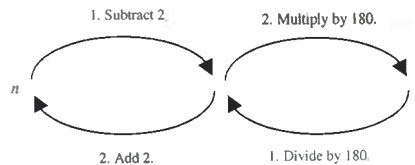


- c) The cost is about \$26.
No, the price is not reasonable.
The cost would never reach zero after 10 weeks – it is not realistic.
- d) No, the line of best fit does not represent the data. The data curve, but the line does not.
The correlation is non-linear, except for the middle range values (from weeks 4 to 7).

13. Part i
14. a) Zurich, Oslo, Dublin
b) Copenhagen, Toronto, Tokyo, Rome, Hong Kong, New Delhi
15. a) The population increases slowly at first, then rapidly, then slowly again before leveling off.
b) The population increases by about 16 fruit flies per day.
c) The rate of change in the fruit fly population is about 0 flies per day.
No calculation was required.
The graph is almost horizontal.
16. a) $A = 100(1.06)^n$ Exponential
b) $A = 100(1 + t)^2$ Quadratic
c) $A = P(1.08)^t$ Linear
17. a) About 0.0972 billion/year
The world's population is increasing by about 97 million people each year.
b) The scatter plot looks nearly linear.
A linear model should fit the data well.
c) $y = 0.098x + 4.925$
d) The population in 2007 (year 21) is about 6.988 billion.

18. About 35 buckets

19. a) $n = \frac{S}{180} + 2$



b) 6 sides

20. a) $\frac{1}{9}$
b) $\frac{16}{81}$
c) 64
d) $\frac{25}{81}$
e) 12
f) 16

21. a) $\frac{1}{256}$
 b) 256
22. a) $x = 3$
 b) $x = 3$
 c) $x \approx 2.322$
 d) $x = \frac{1}{6}$
 e) $x = 16$
 f) $x \approx 46.27$

To check if the solutions are correct, substitute the value of x into the left side of the equation. If the answer is correct, the value of the left should equate the right.

23. About 8%
24. a) In 10 years, the wolf population will be 98 wolves.
 b) The doubling time for the wolf population is about 35 years.
25. The amount of these deposits after 5 years is \$16 574.74.
26. a) $PV = \$143\,820.39$
 b) Yes, the value would double.
 $PV (\$2000 \text{ monthly payments}) = \$287\,640.78$
28. a) Regular quarterly payment: \$703.61
 b) No, it will take about 2 years to repay the loan.
29. a) Monthly payment: \$1279.61
 Total interest paid: \$183 885.31
 b) Interest saved: \$42 035.67
 c) It would take 21 years to repay the mortgage, and they would have saved \$34 035.35.

30.

Principal	\$200 000.00
Annual interest rate	6.00%
Equivalent monthly rate	0.49%
Amortization period in years	25
Number of payments	300
Monthly payments	\$1279.61

Payment number	Payment	Interest paid	Principle paid	Outstanding balance
0				\$200 000.00
1	\$1279.61	\$987.72	\$291.89	\$199 708.11
2	\$1279.61	\$986.28	\$293.33	\$199 414.78
3	\$1279.61	\$984.83	\$294.78	\$199 120.00
4	\$1279.61	\$983.38	\$296.23	\$198 823.77
5	\$1279.61	\$981.92	\$297.69	\$198 526.08
6	\$1279.61	\$980.45	\$299.16	\$198 226.92

- a) Interest: \$5904.58
 Principal: \$1773.08
 b) \$198 526.08

31.

Description	Total costs (\$)
Rent	9900.00
Content insurance	240.00
Cable/Internet/phone	1488.00
Utilities	1320.00

Total housing costs for one year: \$12 948

32. Yes
33. a) Personal expenses (monthly): \$100.00
 Laundry (monthly): \$22.00
 Entertainment (monthly): \$650.00
 Total expenses: \$772.00
 b) Jeremy will save \$728 each month.
 c) He will have saved \$8736 after 1 year.
 He will have \$5436 to cover his housing and living expenses (\$453/month).
 He will likely have to get a part-time job.
 It is unlikely he will be able to live on \$450/month.
34. Annual net income: \$2750/month
 Expenses: \$1400
 Housing expenses: \$1350
 Option 1 cost: \$1119 monthly (\$231 remaining)
 Option 2 is recommended.
 Maral's annual income is not enough for her to comfortably afford Option 1.