1. **a)**

Figure Number, n	Perimeter, P
1	4
2	10
3	16
4	22

b) $6n - 2$ **c)** 238 units

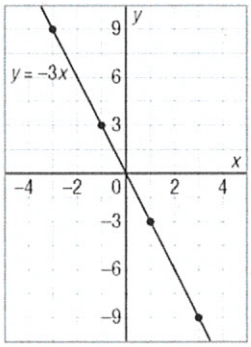
d) $P = 6n - 2$ **e)** Figure 23

2. **a)** $C = 10 + 0.25t$ **b)** \$23.75

c) 50 min

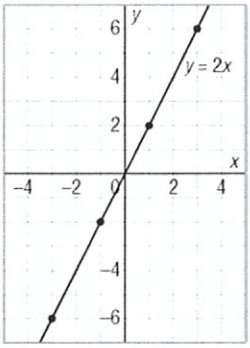
3. **a)** $y = -3x$

x	y
–3	9
–1	3
1	–3
3	–9



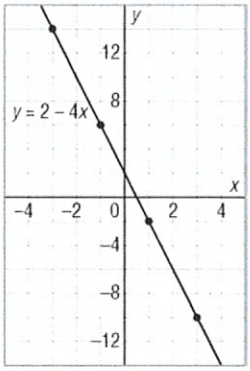
b) $y = 2x$

x	y
–3	–6
–1	–2
1	2
3	6



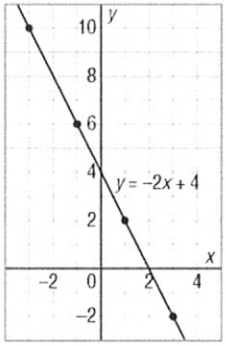
c) $y = 2 - 4x$

x	y
–3	14
–1	6
1	–2
3	–10



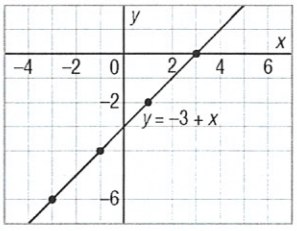
d) $y = -2x + 4$

x	y
–3	10
–1	6
1	2
3	–2



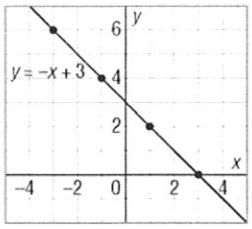
e) $y = -3 + x$

x	y
–3	–6
–1	–4
1	–2
3	0



f) $y = -x + 3$

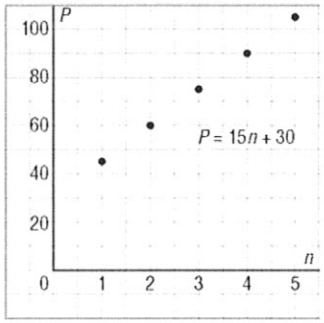
x	y
–3	6
–1	4
1	2
3	0



4. a)

Number of Weeks, n	Total Paid, P ($)
1	45
2	60
3	75
4	90
5	105

b) I should not join the points because Alicia pays once a week, so the data are discrete.



c) In the table, P increases by \$15 each week. On the graph, to get from one point to the next, move 1 unit right and 15 units up.

5. a)

x	y
1	10
2	14
3	18
4	22
5	26

b)

x	y
1	−6
3	−10
5	−14
7	−18
9	−22

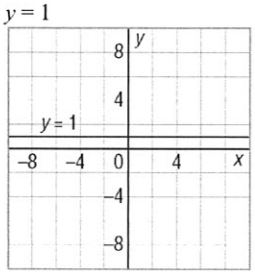
c)

x	y
−2	−15
−1	−9
0	−3
1	3
2	9

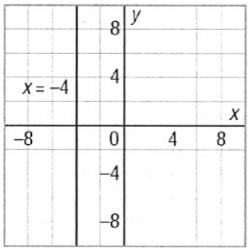
d)

x	y
2	1
4	−2
6	−5
8	−8
10	−11

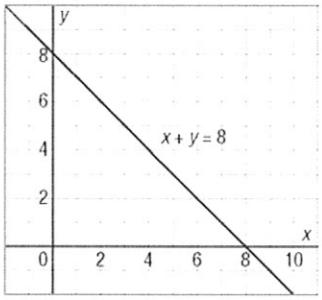
6. a) i) $y = 1$



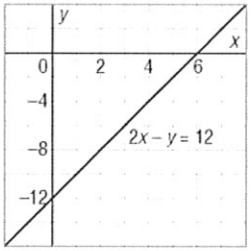
ii) $x = -4$



iii) $x + y = 8$



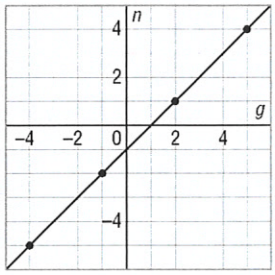
iv) $2x - y = 12$



7. a)

g	n
5	4
2	1
−1	−2
−4	−5

b) I would join the points because all values between the plotted points are permitted.



c) $g - n = 1$

4.4 Matching Equations and Graphs, page 188

3. **a)** iii **b)** i
c) ii

4. **a)** C **b)** B
c) A

5. **a)** ii **b)** iii
c) i

6. **a)** i **b)** iii
c) ii

7. **a)** B **b)** A
c) C

8. Graph B

9. **a)** $y = -x + 2$ **b)** $3x - y = -3$

11. **c)** **i)** C **ii)** A
iii) D **iv)** B

12. **a)** $2y - x = 6$ **b)** $y = 1$
c) $2x + y = 8$

13. **a)** $x - 2y = -8$ **b)** $y = -2x - 8$
c) $y = -2x + 5$ **d)** $y = \frac{1}{2}x - \frac{1}{2}$

4.5 Using Graphs to Estimate Values, page 196

4. **a)** **i)** 6 **ii)** 0
iii) −1
b) **i)** −5 **ii)** 1
iii) 4

5. **a)** **i)** −3 **ii)** 1
iii) 7
b) **i)** 3 **ii)** 0
iii) $-1\frac{1}{2}$

6. **a)** **i)** −10 **ii)** 10
iii) 18
b) **i)** 4 **ii)** −2
iii) $-3\frac{1}{2}$

7. **a)** **i)** 2.5 **ii)** −2.5
iii) −4
b) **i)** −9 **ii)** 7
iii) 11

8. **a)** About \$550 **b)** 10 months
c) About \$480

9. **a)** About 300 Calories **b)** About 24 min
c) About 100 Calories

10. **a)** About 0.5 **b)** About 1.25
c) About 1.5

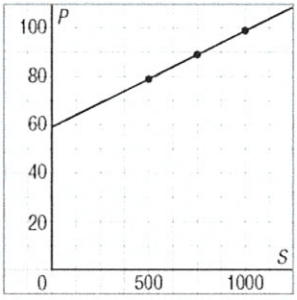
11. **a)** **i)** About 20 m/s **ii)** About 30 m/s
b) **i)** About 220 km/h **ii)** About 30 km/h
c) **i)** I used interpolation for part a, i and ii and part b, ii.
ii) I used extrapolation for part b, i.

12. **i)** About −2.5 **ii)** About 0.5
iii) About 3.5

13. **a)** About \$300
b) About 11 weeks, assuming her rate of pay stays the same.
c) If the rate of pay changed, the graph would no longer be valid.

14. **a)** **i)** About $-\frac{17}{3}$ **ii)** About $-\frac{25}{3}$
iii) About $\frac{35}{3}$
b) **i)** About −2.5 **ii)** About 7.25
iii) About 8.75

15. **a)**



b) About \$1.15 **c)** About 150 mL

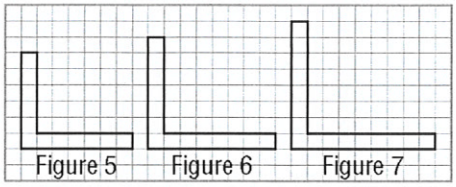
Unit 4 Technology: Interpolating and Extrapolating, page 199

1. **a)** **i)** \$8.50 **ii)** About \$42.50
b) **i)** About 76 L **ii)** About 14 L

Unit 4: Review, page 201

1. **a)** Figure 1: 10 units Figure 2: 14 units
Figure 3: 18 units Figure 4: 22 units

b)



c)

Figure Number, n	Perimeter, P
1	10
2	14
3	18
4	22
5	26
6	30
7	34

d) $6 + 4n$ **e)** $P = 6 + 4n$

f) 126 units **g)** Figure 21

2. a) As n increases by 1, v increases by 3.

b) $3n - 8$ **c)** $v = 3n - 8$

e) 55 **f)** 38

3. a)

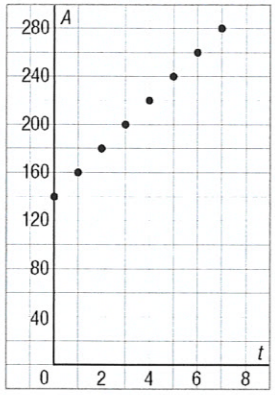
Term Number, n	Term Value, v
1	75
2	71
3	67
4	63
5	59
6	55
7	51

b) $79 - 4n$

4. a)

Time, t (months)	Account Balance, A ($)
0	140
1	160
2	180
3	200
4	220
5	240
6	260
7	280

b) I will not join the points because Norman deposits money once a month, making the data discrete.



c) The relation is linear because the points lie on a straight line.

d) In the table, as t increases by 1, A increases by \$20. On the graph, to get from one point to the next, move 1 unit right and 20 units up.

e) $A = 140 + 20t$

5. a) $y = 4x$

x	y
1	4
2	8
3	12

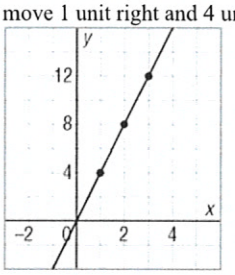
b) $y = 10 - 2x$

x	y
0	10
1	8
2	6

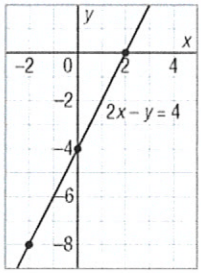
c) $y = 3x + 4$

x	y
−3	−5
−2	−2
−1	1

6. a) In the table, as x increases by 1, y increases by 4. On the graph, to get from one point to the next, move 1 unit right and 4 units up.

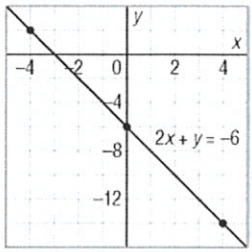


b) In the table, as x increases by 1, y decreases by 2. On the graph, to get from one point to the next, move 1 unit right and 2 units down.



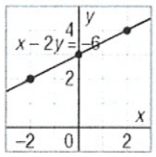
c) $2x + y = -6$

x	y
−4	2
0	−6
4	−14



d) $x - 2y = -6$

x	y
−2	2
0	3
2	4



10. **a)** Vertical **b)** Oblique
c) Horizontal **d)** Vertical

11. $y = -3x - 2$

12. Graph B

13. **a)** iii **b)** i
c) iv **d)** ii

14. **a)** About 2.6 m^3
b) About 1950 kg

15. **a)** About 1035 km
b) About 590 km

16. **a)** About 130 L **b)** About 400 km

17. **a)** **i)** $9\frac{1}{3}$ **ii)** $1\frac{1}{3}$
iii) $-2\frac{2}{3}$

b) **i)** $-2\frac{1}{4}$ **ii)** $1\frac{1}{2}$
iii) $5\frac{1}{4}$

Unit 4: Practice Test, page 204

1. **a)**

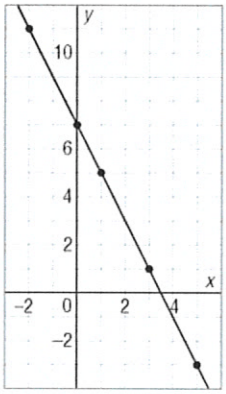
Figure Number, f	Number of Square Tiles, s
1	5
2	10
3	15
4	20

b) $5f$ **c)** $s = 5f$
e) Figure 45

2. **a)** Tables may vary. For example:

x	y
−2	11
0	7
1	5
3	1
5	−3

b)



c) In the table, as the x increases by 2, y decreases by 4. On the graph, to go from one point to the next, move 2 units right and 4 units down.

3. **a)** Vertical **b)** Horizontal
c) Vertical

4. **a)** i **b)** ii
c) iv **d)** iii

5. **a)** About 8 days **b)** About 450 L
c) About 350 L
d) The rate of water usage remains constant and no water was added to the cistern.

Unit 5 Polynomials, page 208

5.1 Modelling Polynomials, page 214

4. Parts a, c, d, and f; the terms in the polynomial are of degree 1, 2, or a constant.

5. **a)** Trinomial; it has three terms of different degrees.
b) Binomial; it has two terms of different degrees.
c) Monomial: it has only one term of degree 1.
d) Monomial: it has only one term of degree 0.

6. **a)** Coefficient: −7; variable: x; degree: 1