

Practice book answers

Chapter 1

Exercise 1a page 1

- 1 a 3 b -3 c -2 d -9
2 a -15 b -2 c -4 d -18
 e 5 f -4 g 7 h -8
 i -8 j 0 k -7 l 7

Exercise 1b page 2

- 1 a 355 b 418 c 487

Exercise 1c page 3

- 1 a $4 \times 1, 2 \times 2$ b $1 \times 12, 2 \times 6, 3 \times 4$
 c $4 \times 4, 16 \times 1, 2 \times 8$
2 a 4, 200, 300, 12, 250, 36, 112, 320
 b 95, 300, 200, 15, 25, 250, 320
 c 300, 200, 250, 320
 d 200, 300

Chapter 2

Exercise 2a page 4

- 2 b grams c litres d kilometres
3 a less than b more than c more than d less than

Exercise 2d page 5

- 1 10, 6 2 10, 4 3 14, 12 4 12, 8
5 14, 10 6 16, 12 7 14, 6 8 12, 8

Exercise 2e page 6

- 1 a chemist b shoe shop c snack bar
 d hobby shop
2 a 1F b 4B c 4C d 6F
3 a shoe shop b chip shop c bank
 d bargain store
4 a 12:00 b 11:45 c 16:20 d 15:10

Chapter 3

Exercise 3b page 7

- 2 students' suggestions

Exercise 3c page 8

See students' diagrams

Exercise 3d page 9

Dependent on class data

Exercise ML1 page 10

- 1 50p; 1 in 5; 4 in 5 2 50; 1 in 5; 4 in 5
3 £1; 2 in 5; 3 in 5 4 1 to 5; £2.50

Chapter 4

Exercise 4a page 11

- 1 0.2, 0.3, 0.4, 0.5, 0.7, 0.8, 0.9
2 a 1.9, 2.1 b 8.2, 8.4 c 6.4, 6.5 d 9.8, 10.0
3 3.3, 1.5

Exercise 4b page 12

See diagrams

Exercise 4c page 13

- 1 a $\div 7, \frac{1}{2}$ b $\div 10, \frac{1}{4}$
2 $\frac{2}{8}, \frac{4}{16}, \frac{3}{12}, \frac{20}{80}, \frac{5}{20}, \frac{13}{52}, \frac{6}{24}, \frac{10}{40}$

Exercise 4d page 14

- 1 6.5 cm, 4.7 cm, 7.8 cm, 5.1 cm
2 a 8.9 b 12.3 c 18.7

Exercise 4e page 15

- 2 b 5 c 10
3 b 6 c 12

Exercise 4f page 16

- 1 a £50 b £350 c £450
3 a $\div 10$ b $\div 10, \times 4$ c $\div 10, \times 9$
 d $\div 10, \times 3$

Exercise 4g page 17

- 1 e 20%
3 $\frac{1}{100}, \frac{1}{10}, 30\%, \frac{1}{2}, 69\%, 75\%, \frac{4}{5}, 100\%$

Chapter 5

Exercise 5b page 18

Game

Exercise 5c page 19

- 1 a 2 cm b 5 cm c 4 cm
2 a 2 m b 5 y c 4 p

Exercise 5e page 20

- 1 a 3d b i 1.5 cm ii 21 cm iii 45 cm
2 a 15 cm² b 8 cm² c 70 cm²

Chapter 6

Exercise 6a page 21

- 1 acute, more than 0° and less than 90°
2 right angle, exactly 90°
3 obtuse, more than 90° and less than 180°
4 straight line, exactly 180°

Exercise 6b page 22

- 1 $a = 100^\circ, b = 40^\circ, c = 150^\circ$
 $d = 90^\circ, e = 55^\circ, f = 128^\circ$
2 $a = 150^\circ, b = 300^\circ, c = 190^\circ$

Exercise 6c page 23

- 1 50°, right-angled
2 40°, right-angled
3 60°, equilateral
4 60°, scalene
5 40°, isosceles
6 40°, isosceles

Exercise 6e page 24

See picture

Chapter 7**Exercise 7a page 25**

- 1 a 9 b 9 c 40 d 70
 2 a 13 b 26
 c various possible d 28
 e many possible f many possible

Exercise 7b page 26

- 1 a 6 b 10
 c 7 d -6
 e +6 f $\times 6$
 2 b 20 c 8 d 69
 3 33

Exercise 7d page 27

- 1 9, 12, 15, 18, 21, 24
 2 (1, 3), (2, 6), (3, 9), (4, 12), (5, 15), (6, 18), (7, 21), (8, 24)

Exercise 7e page 28

- 1 a (0, -2), (1, -1), (2, 0), (3, 1), (4, 2), (5, 3)
 2 a 0, 1, 2 b 4, 5, 6, 8 c 0, 3, 6, 9, 12

Chapter 8**Exercise 8a page 29**

- 1 2, 3, 3, 3
 2 various possible
 3 13 cm

Exercise 8c page 30

- 1 (clockwise from top) 11, 13, 6, 17, 12, 18
 2 (clockwise from top) 140, 190, 80, 130, 20, 130, 90, 170

Exercise 8d page 31

- 1 a 0.6 b 0.4
 c 0.4 d 0.7
 e 0.8 f 0.8
 g 2.1 h 2.0
 2 4.4

Exercise 8e page 32

- 1 a 6.9 b 12.5 c 2.6 d 0.4
 2 a 0.2 b 0.4 c 0.6 d 0.25

Exercise 8f page 33

- 1 a 91 b 192
 2 a 40 b 36 c 36 d 32
 3 a 41 b 35.4 c 36.4 d 29.6

Exercise 8g page 34

- 2 22
 3 b 26 c 2

Chapter 9**Exercise 9a page 35**

- 1 b $A' = (4, 6)$ $B' = (1, 1)$ $C' = (6, 2)$
 2 b $A = (10, 2)$ $B' = (7, 2)$ $C' = (5, 0)$
 $D' = (5, 2)$ $E' = (4, 6)$

Exercise 9b page 36

See diagrams

Exercise 9c page 37

- 1 a clockwise 90° b anticlockwise 180°
 c clockwise 180° d anticlockwise 90°
 2 See diagrams
 3 See diagrams

Exercise 9e page 38

- b (1, 9), (4, 9), (1, 14)
 c (15, 16), (15, 19), (17, 18), (19, 16), (19, 19)
 d (11, 5), (9, 7), (7, 7), (7, 5)

Exercise 9f page 39

- 1 a square b rectangle
 2 F1, R90, F1, R90, F2, R90, F2, R90, F3, R90, F3, R90, F4

Exercise ML2 page 40

- 2 Regular octagon

Chapter 10**Exercise 10a page 41**

- 1 a 5, 8, 11, 14, 17 b 19, 16, 13, 10, 7
 c -4, -1, 2, 5, 8
 2 a 16, 19, 22 b 16, 11, 6; 36, subtract 5
 c 4, 7, 10; -8, add 3 d -2, -6, -10; 14, subtract 4
 e -4, 0, 4; -20, add 4

Exercise 10b page 42

- 1 b 20 c 40 cm d 200 cm or 2 m
 2 a 15 b 33 c 57
 3 See table

Chapter 11**Exercise 11a page 43**

- 1 primary: survey, questionnaire, experiment, interview
 secondary: newspaper, library, database, website, magazine
 2 B is the easiest to test.

Exercise 11b page 44

See students' responses

Exercise 11c page 45

See students' data

Exercise 11d page 46

- 1 see diagram
 2 b 14.00 c increasing

Exercise 11e page 47

- 1 See diagram (frequencies 3, 5, 4)
2 a 2 b 19 c 3, 4, 2, 5

Chapter 12

Exercise 12a page 48

- 1 a 2:3

Exercise 12b page 49

See tables

Exercise ML 3 page 50

- 1 A: £9.00 B: £7.60 C: £5.05
2 A: £1.00 B: £2.40 C: £4.95

Chapter 13

Exercise 13a page 51

- 1 26 cm
2 42 cm
3 57 cm

Exercise 13b page 52

- 1 2, 4
2 3, 6
3 4, 8
4 5, 10
5 double
6 $2 \times$ number of lines, or $S = 2n$

Exercise 13c page 53

- 1 a 17 b 32 c 21 d 7
2 a 4 b 4
3 $\times 5 + 2$ or $+20 + 2$ or $+2 + 20$

Exercise 13d page 54

- 1 (1, 2), (2, 4), (3, 6), (4, 8), (5, 10), (6, 12)
2 (0, -3), (1, -1), (2, 1), (3, 3), (4, 5), (5, 7)

Exercise 13f page 55

- 1 d $x = 1$ e $x = 7$
2 various possible

Exercise 13g page 56

- 1 Cross-country running
2 sleeping

Chapter 14

Exercise 14a page 57

- 1 a 4.2 cm b 2.1 cm c 2.5 cm d 4.4 cm
e 14.6 cm f 4.6 cm g 8.1 cm h 1.4 cm
i 2.2 cm j 3.1 cm

Exercise 14b page 58

- 1 a $\angle RST = 35^\circ$, $\angle PQR = 55^\circ$
2, 3 see students' constructions

Exercise 14d page 59

- 1 a 20m^2 b 36m^2 c 63m^2
d 31m^2 e 52m^2 f 117m^2

Exercise 14e page 60

- a cuboid
b triangular prism
c hexagonal prism

Exercise 14f page 61

See diagrams

Exercise 14g page 62

See scale drawing

Chapter 15

Exercise 15b page 63

- 1 a 5 b 4
2 a 45 b 15
3 a £40 b £8
4 a 60 b 15

Exercise 15e page 64

- 1 a 15 m b 2 m c 13 m
2 b 21 m, 27 m, 18 m, 24 m, 12 m, 30 m
c 7 m, 9 m, 6 m, 8 m, 4 m, 10 m
3 Claire – longest mean flight

Exercise 15f page 65

- 1 Mode is highest frequency, not biggest shoe size
2 e.g. bars not uniform widths, vertical scale wrong
3 biased
4 age

Exercise ML4 page 66

- 1 a 6 b 9
c 12 d 30
2 a 2 b 4
c 5 d 8
3 a 40 b 100