

Pages 4–5

- 6400926
 - 9218074
 - 2100000
 - 3290591
 - 1400212
 - 4001390
 - 7002008
 - 1400260
- six million seven hundred and eighty-five thousand one hundred and forty-one
 - one million five hundred and ten thousand nine hundred and thirty
 - four million eight hundred and ninety thousand and eighty-one
- 2069921
 - 7204025
 - 3363280
 - 85001597

City	Country	Population
Tokyo	Japan	35 521 740
Mexico City	Mexico	22 843 550
New York	USA	22 310 740
Mumbai	India	19 463 950
Shanghai	China	16 708 510
Cairo	Egypt	15 837 460
Moscow	Russia	14 432 190
London	UK	12 412 330

Pages 6–7

- 17
 - 14
 - 6
 - 1
 - 3
 - 9
- 16
 - 9
 - 23
 - 17
- 14°C, -13°C, -5°C, 0°C, 3°C, 18°C
- 6°
 - 45°
 - 21°
- 1 m 6 cm (or 106 cm)
 - 93 cm (or 0.93 m)
 - 6th attempt
 - 8th attempt
 - 6 below the target (-6)

Pages 8–9

- 18
 - 25
 - 16
 - 43
 - 33
 - 24
 - 18
 - 6
- $(5 - 3) \times (4 + 2) = 12$
 - $15 + (21 \div 7) - 8 = 10$
 - $(9 \div 3) + (6 - 5) = 4$
 - $2 \times (4 + 2) \times 4 = 48$
 - $(5 + 10) - (18 \div 9) = 13$
- 3
 - 2
 - 3
 - 6
 - 3
- There are many possible solutions. Check each calculation gives each number from 1–20 as the answer.

Page 10

- 17
- 6210050
- 30
- <
- 7
- 20°C, 21°C
- 5
- six hundred thousand (or 600000)
- 21
- 8731097, 8130974
- 9 0 9 9 9 9

- 48
- >
- 75
- 4008160
- 17
- 108
- 3, 8
- 3
- 7

Page 11

- 80
- 5 3 3 3 5 3
- 17
- 2106010
- 40
- 6, 4
- 5
- 13
- 7
- <
- 5041600
- 4
- 56
- 6240076, 4667452
- 6
- nine million (or 9000000)
- 72
- 19°C, 14°C
- >
- 55

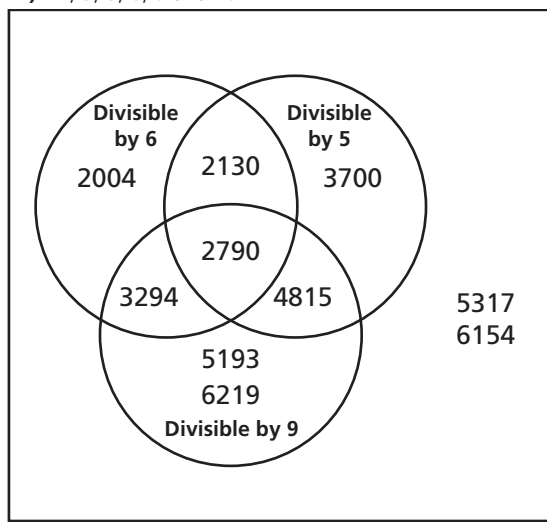
Pages 12–13

- 145
 - 115
 - 181
 - 183
 - 223
 - 345
- 26
 - 28
 - 18
 - 76
 - 67
 - 38
- 495

Pages 14–15

- 40, 4.0
 - 21, 2.1
 - 36, 3.6
 - 42, 4.2
 - 64, 6.4
 - 63, 6.3
 - 49, 4.9
 - 45, 4.5
- $20 + 1.5 = 21.5$
 - $(7 \times 8) + (0.5 \times 8) = 56 + 4.0 = 60$
 - $(8 \times 9) + (0.6 \times 9) = 72 + 5.4 = 77.4$
 - $(5 \times 3) + (0.9 \times 3) = 15 + 2.7 = 17.7$
 - $(6 \times 7) + (0.2 \times 7) = 42 + 1.4 = 43.4$
- 50.4
 - 20.4
 - 28.8

Pages 16–17

- 6
 - 2
 - 4
 - 2
 - 7
 - 8
- 2, 3, 4, 6 and 8
 - 3 and 9
 - 2, 5 and 10
 - 2, 3, 4 and 6
 - 2, 3, 4, 5, 6, 8 and 10
 - 2, 3, 5, 6, 9 and 10
- 

Answers

Page 18

- | | |
|------------|-------------------|
| 1. 35, 3.5 | 2. 91 |
| 3. 432 | 4. 145 |
| 5. £10.80 | 6. Yes |
| 7. 1.8 | 8. 2 |
| 9. 57 | 10. 235 |
| 11. 543 | 12. 31.2 |
| 13. 6, 9 | 14. 146 |
| 15. 7.2 | 16. 37p |
| 17. 60 | 18. 2055 and 2058 |
| 19. 237 | 20. 40.2 |

Page 19

- | | |
|-------------------|--------------|
| 1. 242 | 2. 149cm |
| 3. 32, 3.2 | 4. 40 and 45 |
| 5. 1.5 | 6. 4, 8 |
| 7. 81 | 8. No |
| 9. £5.40 | 10. 169 |
| 11. 32 | 12. 8.1 |
| 13. 708 | 14. 226 |
| 15. 6248 and 6252 | 16. 14.4 |
| 17. 84p | 18. 2 |
| 19. 174 | 20. 68.4 |

Pages 20–21

- 15, 30, 45, 60, 75, 90
 - 30, 60, 90
 - 36, 72
 - 10, 20, 30, 40, 50, 60, 70, 80, 90
- 15
 - 30
 - 36
 - 10
- 24
 - 45
 - 30
 - 36
 - 60
 - 24
- (1, 48) (2, 24) (3, 16) (4, 12) (6, 8)
 - (1, 27) (3, 9)
 - (1, 45) (3, 15) (5, 9)
 - (1, 36) (2, 18) (3, 12) (4, 9) (6, 6)
 - (1, 30) (2, 15) (3, 10) (5, 6)
 - (1, 42) (2, 21) (3, 14) (6, 7)
- 1, 2, 3, ⑥
 - 1, 3, ⑨
 - 1, 2, 3, ⑥
 - 1, 2, 3, ⑥
 - 1, 3, 5, ⑮
 - 1, 3, ⑨
 - 1, 2, 3, ⑥

Pages 22–23

- 9
 - 100
 - 16
 - 36
 - 4
 - 144
 - 25
 - 49
 - 64
 - 1
 - 81
 - 121
- odd
- Check all the numbers have been crossed out except those listed in **b**.
 - 2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47, 53, 59, 61, 67, 71, 73, 79, 83, 89, 97
 - Each number only has two factors, 1 and itself.

Pages 24–25

- 21, 27 the rule is +6
 - 35, 46 the rule is +11
 - 19, -28 the rule is -9
 - 5, -45 the rule is -50
 - 4.45, 4.65 the rule is +0.2
- 10, 2n
 - 13, 2n + 3
 - 1, n - 4
 - 13, 3n - 2
- 60
 - 63
 - 26
 - 88

Page 26

- | | |
|-----------------|-----------|
| 1. (4, 8) | 2. 72, 36 |
| 3. 25 | 4. 43 |
| 5. 28 | 6. 25 |
| 7. -12 | 8. 0 |
| 9. 72, 48 | 10. 36 |
| 11. 1, 3, 7, 21 | 12. +0.4 |
| 13. 7.1 | 14. 64 |
| 15. 23 | 16. 15 |
| 17. 3n | 18. 121 |
| 19. 1, 3, 9 | 20. 12 |

Page 27

- | | |
|------------|-----------------|
| 1. 60, 36 | 2. 9 |
| 3. 17 | 4. 49 |
| 5. 15 | 6. 29 |
| 7. (6, 7) | 8. 84, 42 |
| 9. -5 | 10. -13 |
| 11. 81 | 12. 11 |
| 13. 2n + 1 | 14. 1, 2, 7, 14 |
| 15. 100 | 16. +30 |
| 17. 516 | 18. 144 |
| 19. 20 | 20. 1, 2, 4 |

Pages 28–29

- 6
 - 1
 - 5
 - 54
 - 9
 - 8
 - 16
 - 3
 - 16
 - 10
 - 80
 - 7
- <
 - <
 - <
 - <
 - >
 - >
 - >
 - >
- melons
 - James
 - cup
 - non-fiction

Pages 30–31

- 18, 56, 80, 60
 - 32, 28, 84, 200
 - 27, 69, 135, 81
 - 63, 21, 77, 49
- $2\frac{2}{3}$
 - $2\frac{2}{5}$
 - $2\frac{1}{2}$ (or $2\frac{2}{4}$)
 - $6\frac{1}{2}$
 - $1\frac{1}{2}$
 - $3\frac{1}{3}$
- £12
 - 18
 - 160m
 - 0.9kg (or 900g)
 - 20
- $\frac{3}{4}$ of 4.4kg
 - $\frac{7}{10}$ of 4kg
 - $\frac{2}{5}$ of 4.5kg
 - $\frac{3}{4}$ of 1.2kg

Pages 32–33

- $2\frac{7}{8}$
 - $1\frac{11}{15}$
 - $1\frac{2}{20}$
 - $2\frac{1}{9}$
 - $1\frac{1}{5}$
 - $\frac{13}{20}$
 - $2\frac{1}{20}$
 - $3\frac{27}{40}$
 - $1\frac{1}{4}$
- $1\frac{1}{10}$
 - $3\frac{19}{20}$
 - $4\frac{39}{40}$
 - $3\frac{1}{9}$
 - $2\frac{13}{24}$
 - $1\frac{1}{20}$
 - $3\frac{7}{30}$
 - $3\frac{13}{15}$
 - $3\frac{2}{3}$

4. $\frac{1}{3} + \frac{1}{6} = \frac{1}{2}$
 $\frac{3}{10} + \frac{1}{5} = \frac{1}{2}$
 $\frac{3}{8} + \frac{1}{4} = \frac{3}{8}$

Page 34

- $\frac{6}{15}, \frac{6}{16}$
- Tuesday
- 60
- <
- $3\frac{1}{8}$
- $\frac{3}{4}$ of 4.8 km
- $4\frac{39}{40}$
- 14
- $\frac{25}{35}, \frac{12}{16}$
- $\frac{5}{9} < \frac{4}{7} < \frac{2}{3}$
- $\frac{3}{10}$ of 5 kg
- $2\frac{3}{20}$
- $1\frac{1}{6}$
- 27
- 36
- $4\frac{1}{5}$
- >
- $3\frac{43}{60}$
- $\frac{3}{10}$ m
- $\frac{9}{10}$ of the cake

Page 35

- 120
- $3\frac{17}{30}$
- $\frac{10}{14}, \frac{24}{30}$
- $\frac{3}{4} < \frac{7}{9} < \frac{5}{6}$
- $3\frac{1}{6}$
- 45
- $2\frac{11}{40}$
- >
- $\frac{2}{3}$ of 1.8 kg
- blue
- $\frac{16}{40}, \frac{15}{24}$
- 4
- $5\frac{5}{7}$
- 44
- >
- $\frac{7}{8}$ of the pizza
- 13
- $\frac{5}{6}$ of 5.4 m
- $1\frac{11}{45}$
- $4\frac{7}{20}$

Pages 36–37

- 0.7
 - 0.8
 - 0.4
 - 0.8
 - 0.5
 - 0.75
 - 0.45
 - 0.08
 - 0.33
 - 0.09
- $\frac{1}{2}$
 - $\frac{3}{10}$
 - $\frac{7}{10}$
 - $\frac{4}{5}$
 - $\frac{2}{5}$
 - $\frac{21}{50}$
 - $\frac{4}{25}$
 - $\frac{39}{50}$
 - $\frac{17}{20}$
 - $\frac{2}{25}$
- $4\frac{2}{10} = 4.2$
 - $9\frac{4}{10} = 9.4$
 - $3\frac{8}{10} = 3.8$
 - $11\frac{6}{10} = 11.6$
 - $4\frac{5}{10} = 4.5$
 - $3\frac{4}{100} = 3.04$
 - $5\frac{78}{100} = 5.78$
 - $10\frac{6}{100} = 10.06$
 - $6\frac{35}{100} = 6.35$
 - $2\frac{5}{100} = 2.05$
- $\frac{7}{100}, \frac{3}{10}, \frac{37}{100}, \frac{7}{10}$
 - $\frac{41}{100}, \frac{1}{2}, \frac{2}{5}, \frac{7}{10}$
 - $\frac{1}{50}, \frac{2}{25}, \frac{14}{50}, \frac{4}{5}$
 - $\frac{29}{50}, \frac{18}{25}, \frac{3}{4}, \frac{4}{5}$

Pages 38–39

- $\frac{1}{2} = 0.5 = 50\%$
 - $\frac{1}{4} = 0.25 = 25\%$
 - $\frac{1}{5} = 0.2 = 20\%$
 - $\frac{2}{5} = 0.4 = 40\%$
 - $\frac{17}{50} = 0.34 = 34\%$
 - $\frac{7}{10} = 0.7 = 70\%$
 - $\frac{7}{100} = 0.07 = 7\%$
 - $\frac{11}{25} = 0.44 = 44\%$
- $\frac{4}{5}$
 - $\frac{13}{25}$
 - $\frac{3}{5}$
 - $\frac{17}{50}$
 - $\frac{7}{20}$
 - $\frac{13}{20}$
 - $\frac{1}{50}$
 - $\frac{49}{50}$
- 70%
 - 75%
 - 80%
 - 90%
 - 60%
 - 79%
- Beth
 - $\frac{45}{50}, \frac{4}{5}, \frac{79}{100}, \frac{15}{20}, \frac{7}{10}, \frac{15}{25}$
- $\frac{3}{4}$ blue, $\frac{3}{20}$ red, $\frac{1}{20}$ white, $\frac{1}{20}$ yellow
 - $\frac{3}{5}$ blue, $\frac{3}{10}$ yellow, $\frac{2}{25}$ white, $\frac{1}{50}$ black
 - $\frac{11}{20}$ yellow, $\frac{1}{4}$ red, $\frac{9}{50}$ white, $\frac{1}{50}$ black

Pages 40–41

1.

	What is?				
	10% of ...	20% of ...	5% of ...	50% of ...	25% of ...
£20	£2	£4	£1	£10	£5
£60	£6	£12	£3	£30	£15
£50	£5	£10	£2.50	£25	£12.50
£24	£2.40	£4.80	£1.20	£12	£6

- £3, £9
 - £7, £28
 - £2.50, £7.50
 - £0.80, £0.40
 - £0.60, £1.20
 - £4, £48
- Amount off: £4; Sale price: £36
 - Amount off: £6; Sale price: £54
 - Amount off: £14; Sale price: £56
 - Amount off: £10; Sale price: £15
 - Amount off: £4; Sale price: £76

Page 42

- $\frac{3}{10}, \frac{4}{5}$
- $\frac{72}{100}, \frac{2}{10}$
- 0.2, 0.6
- 0.5, 50%
- $\frac{2}{5}, \frac{13}{50}$
- $6\frac{8}{10} = 6.8, 7\frac{5}{10} = 7.5$
- 0.09, 9%
- £3
- $\frac{17}{20}, \frac{1}{4}$
- £40
- 0.25, 0.7
- 0.4, 40%
- £4.50
- $\frac{9}{25}, \frac{57}{100}$
- £4
- $\frac{1}{20}, \frac{4}{25}$
- 0.3, 0.09
- $\frac{4}{5}, \frac{8}{100}$
- 0.55, 55%
- $1\frac{18}{100} = 1.18, 3\frac{55}{100} = 3.55$

Page 43

- 0.8, 0.4
- $\frac{9}{10}, \frac{9}{100}$
- £27
- £12
- 0.07, 7%
- 0.75, 75%
- $\frac{1}{25}, \frac{7}{25}$
- 0.38, 38%
- 0.48, 48%
- £3
- $\frac{9}{10}, \frac{3}{5}$
- 0.25, 25%
- $\frac{1}{5}, \frac{29}{100}$
- 0.42, 0.6
- $2\frac{6}{10} = 2.6, 4\frac{2}{10} = 4.2$
- $4\frac{6}{100} = 4.06, 10\frac{4}{100} = 10.04$
- 0.9, 0.03
- $\frac{7}{20}, \frac{3}{4}$
- $\frac{2}{5}, \frac{4}{100}$
- $\frac{9}{100}, \frac{6}{25}$

Pages 44–45

- $\frac{1}{2}$ (or $\frac{3}{6}$)
 - $\frac{1}{2}$ (or $\frac{4}{8}$)
 - $\frac{7}{10}$
 - $\frac{2}{5}$
 - $\frac{3}{4}$ (or $\frac{6}{8}$)
- 1 : 1
 - 1 : 1
 - 7 : 3
 - 2 : 3
 - 3 : 1
- 18
 - 3 : 1
 - 24
- 300g flour, 150g butter, 100g sugar, 50g chocolate chips
 - 450g flour, 225g butter, 150g sugar, 75g chocolate chips

Pages 46–47

- $\Delta = 7$
 - $\diamond = 15$
 - $\diamond = 2$
 - $\diamond = 32$
 - $y = 24$
 - $b = 5$
 - $n = 6$
 - $t = 3$
- 4
 - 5
 - 4
 - 9
 - 3
 - 10
- 31
 - 49
 - 160
 - 5
 - 2
 - 54

Answers

4. a) $[x = 1, y = 24] [x = 2, y = 12] [x = 3, y = 8] [x = 4, y = 6]$
 $[x = 6, y = 4] [x = 8, y = 3] [x = 12, y = 2] [x = 24, y = 1]$
 b) $x = 8, y = 3$

Pages 48–49

1. a) 90, 80, 80, 80, 70, 70, 60, 50, 50
 b) 70 c) 80 d) 70
 2. a) 140 cm b) 140 cm c) 150 cm
 3. Median: 29 seconds; Mode: 28 seconds; Mean: 30 seconds
 4. Median: 10 cm; Mode: 10 cm; Mean: 10 cm

Page 50

1. 18 2. 100 g
 3. 200 g 4. 16
 5. 7 6. 28
 7. 30 8. 29
 9. $\frac{1}{2}$ 10. 1 : 1
 11. $\frac{3}{4}$ 12. 6
 13. 170 cm 14. 170 cm
 15. 175 cm 16. 5
 17. 48 18. 3
 19. 17 20. 16

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1. $\frac{1}{3}$ 2. 1 : 2
 3. 6 4. 10
 5. 32 g 6. 34 g
 7. 34 g 8. 20
 9. 2 10. 86
 11. 6 12. 1 : 3
 13. 8 14. 12°C
 15. 12°C 16. 12°C
 17. 3 18. 65
 19. 3 20. mode

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1. 120 2. 27
 3. 30 4. 0.7
 5. 90 6. 31
 7. 55 8. 26
 9. 80 10. 52
 11. 900 12. 33
 13. 3000 14. $1\frac{2}{3}$
 15. 140 16. 28
 17. 950 18. 1.4
 19. 9 20. 25
 21. 1100 22. 31
 23. 7 24. 14
 25. 1.3 26. 0.2
 27. $\frac{2}{3}$ 28. 8
 29. 90 30. 6

31. 680 32. 250
 33. $3\frac{1}{5}$ 34. 25
 35. 5 36. 330
 37. 220 38. 0.3
 39. 42 40. 40

Page 54

1. 72 2. 56
 3. 9 4. 7
 5. 64 6. 84
 7. 6 8. 9
 9. 800 10. 7
 11. 25 12. 2400
 13. 21 14. 11
 15. 1.4 16. 5
 17. 0.18 18. 8
 19. 7 20. 72
 21. 30 22. 140
 23. 121 24. 60
 25. 345 26. 132
 27. 270 28. 49
 29. 1.98 30. 6
 31. 6 32. 810
 33. 23 34. 36
 35. 60 36. 50
 37. 1600 38. 2.4
 39. 630 40. 30

Page 56

1. 28 2. 140
 3. 108 4. 370
 5. 60 6. 400
 7. 4 8. 110
 9. 72 10. 11
 11. 15 12. 96
 13. 0.9 14. 1.3
 15. 1000 16. 5
 17. 100 18. 80
 19. 40 20. 400
 21. 180 22. 90
 23. 20 24. 17
 25. 16 26. 31
 27. 880 28. 3500
 29. 1.5 30. 38
 31. 12 32. 132
 33. 19 34. 160
 35. 8 36. 20
 37. 20 38. 80
 39. 180 40. 144