

Answers Busy at Maths 5

PAGE 1

- 1.**
(a) 2,643
(b) 5,805
(c) 7,034
(d) 4,580
(e) 1,560
(f) 405
- 2.**
(a) 2,562; 2,563; 2,565; 2,566;
2,567; 2,568; 2,570; 2,571
(b) 3,787; 3,788; 3,790; 3,791;
3,792; 3,793; 3,794; 3,796
(c) 6,893; 6,894; 6,895; 6,896;
6,898; 6,899; 6,900; 6,901
(d) 8,996; 8,997; 8,998; 9,000;
9,001; 9,002; 9,004; 9,005
- 3.**
(a) (i) 40
(ii) forty
(b) (i) 700
(ii) seven hundred
(c) (i) 2
(ii) two
(d) (i) 6,000
(ii) six thousand
(e) (i) 700
(ii) seven hundred
(f) (i) 9,000
(ii) nine thousand
(g) (i) 20
(ii) twenty
(h) (i) 900
(ii) nine hundred
(i) (i) 5,000
(ii) five thousand
(j) (i) 7
(ii) seven
(k) (i) 90
(ii) ninety
(l) (i) 800
(ii) eight hundred
- 4.**
(a) 9,543; 3,459
(b) 8,763; 3,678
(c) 9,541; 1,459
(d) 8,762; 2,678
- 5.**
(a) 16, 20, 24
(b) 21, 28, 42, 49
(c) 30, 36, 48, 54

- (d)** 24, 48, 56, 64
(e) 36, 72, 81
(f) 50, 65, 70
(g) 60, 56, 52
(h) 70, 49, 42
(i) 400, 320
(j) 530, 590
(k) 2,600, 2,700
(l) 7,150; 6,950

6.

- (a)** (i) 3,220;
(ii) 3,200;
(iii) 3,000
(b) (i) 4,720;
(ii) 4,700;
(iii) 5,000
(c) (i) 3,200;
(ii) 3,200;
(iii) 3,000
(d) (i) 5,880;
(ii) 5,900;
(iii) 6,000
(e) (i) 6,550;
(ii) 6,500;
(iii) 7,000
(f) (i) 9,350;
(ii) 9,400;
(iii) 9,000
(g) (i) 8,000;
(ii) 8,000;
(iii) 8,000
(h) (i) 7,550;
(ii) 7,600;
(iii) 8,000
(i) (i) 5,090;
(ii) 5,100;
(iii) 5,000
(j) (i) 2,000;
(ii) 2,000;
(iii) 2,000
(k) (i) 8,560;
(ii) 8,600;
(iii) 9,000
(l) (i) 7,450;
(ii) 7,400;
(iii) 7,000

PAGE 2

- 1.**
(a) rhombus
(b) parallelogram
(c) hexagon
(d) octagon
(e) pentagon

2.

- (a)** cuboid
(b) sphere
(c) cylinder
(d) pyramid
(e) prism

3.

- (a)** diagonal
(b) horizontal
(c) parallel

4.

- (a)** right
(b) obtuse
(c) acute

5.

- (a)** 6,888
(b) 4,245
(c) 6,904
(d) 4,632
(e) 7,867
(f) 4,264

6.

- (a)** 8,587
(b) 1,244
(c) 6,965
(d) 2,279
(e) 8,323
(f) 5,126

7.

- (a)** 7,988
(b) 8,877
(c) 8,688
(d) 9,469
(e) 7,788
(f) 9,522

8.

- (a)** 7,137
(b) 9,999
(c) 2,402
(d) 7,328

Challenge 1: 3,374

Challenge 2: 5,847

PAGE 3

1.

- (a)** 10
(b) 18
(c) 28
(d) 48
(e) 54
(f) 72
(g) 50
(h) 64
(i) 63
(j) 56

2.

- (a)** 4
(b) 8
(c) 6
(d) 4
(e) 6
(f) 6
(g) 12
(h) 9
(i) 9
(j) 9

3.

- (a)** 171
(b) 296
(c) 430
(d) 250
(e) 1,428
(f) 3,759

4.

- (a)** 720
(b) 1,224
(c) 2,064
(d) 2,652
(e) 4,085
(f) 6,732

5.

- (a)** 1,056
(b) 1,992
(c) 2,653
(d) 8,128
(e) 5,292
(f) 9,504

6.

- (a)** 8
(b) 9

- (c) 8
- (d) 37
- (e) 167
- (f) 246

- 7.
- (a) 43 R1
 - (b) 151 R2
 - (c) 153 R3
 - (d) 137 R2
 - (e) 124 R2

Challenge 1: 127
Challenge 2: 4,212

- 8.
- (a) 4:30
 - (b) 6:15
 - (c) 2:45
 - (d) 8:25
 - (e) 12:35

- 9.
- (a) 7hrs 45mins
 - (b) 6hrs 25mins
 - (c) 6hrs 24mins
 - (d) 2hrs 27mins
 - (e) 8hrs 26mins
 - (f) 16hrs 20mins

Challenge 3: 2hrs 52mins

PAGE 4

- 1.
- (a) 246c
 - (b) 315c
 - (c) 907c
 - (d) 1,427c
- 2.
- (a) €3.46
 - (b) €8.76
 - (c) €12.34
 - (d) €19.75
- 3.
- (a) €5.69
 - (b) €2.61
 - (c) €8.03
 - (d) €4.23
 - (e) €8.43
 - (f) €2.75

- 4.
- (a) €27.48
 - (b) €33.60
 - (c) €77.04
 - (d) €37.59
 - (e) €35.44
 - (f) €88.11

- 5.
- (a) €1.35
 - (b) €2.19
 - (c) €1.18
 - (d) €1.48
 - (e) €0.79
 - (f) €0.98

Challenge 1: €33.25
Challenge 2: €1.24

- 6.
- (a) (i) $\frac{1}{4}$
(ii) $\frac{3}{4}$
 - (b) (i) $\frac{1}{2}$
(ii) $\frac{1}{2}$
 - (c) (i) $\frac{5}{8}$
(ii) $\frac{3}{8}$
 - (d) (i) $\frac{1}{4}$
(ii) $\frac{3}{4}$
 - (e) (i) $\frac{3}{9}$ or $\frac{1}{3}$
(ii) $\frac{6}{9}$ or $\frac{2}{3}$

- 7.
- (a) >
 - (b) >
 - (c) <
 - (d) <
 - (e) =
 - (f) >

- 8.
- (a) 8
 - (b) 5
 - (c) 6
 - (d) 8

- 9.
- (a) 21
 - (b) 32
 - (c) 9
 - (d) 20
 - (e) 27

- 10.
- (a) $\frac{1}{4}$
 - (b) $\frac{1}{4}$
 - (c) $\frac{1}{8}$
 - (d) $\frac{2}{3}$
 - (e) $\frac{2}{5}$
 - (f) $\frac{4}{5}$

Challenge 3: $\frac{3}{7}$

PAGE 5

- 1.
- (a) (i) 0.6
(ii) 0.4
 - (b) (i) 0.4
(ii) 0.6
 - (c) (i) 0.7
(ii) 0.3
 - (d) (i) 0.1
(ii) 0.9
 - (e) (i) 0.3
(ii) 0.7

- 2.
- (a) 0.3
 - (b) 0.5
 - (c) 0.9
 - (d) 0.14
 - (e) 0.29
 - (f) 1.4
 - (g) 4.7
 - (h) 5.8
 - (i) 7.41
 - (j) 8.74

- 3.
- (a) 0.7, 0.8, 0.9, 1.0
 - (b) 1.0, 1.1, 1.3, 1.4
 - (c) 0.50, 0.51, 0.52
 - (d) 0.78, 0.80, 0.81, 0.82
 - (e) 2.80, 2.82, 2.83
 - (f) 8.98, 8.99, 9.00, 9.01

- 4.
- (a) 100cm
 - (b) 10cm
 - (c) 30cm
 - (d) 25cm
 - (e) 50cm
 - (f) 75cm
 - (g) 150cm
 - (h) 390cm

- 5.
- (a) 250m
 - (b) 700m
 - (c) 500m
 - (d) 750m
 - (e) 10m
 - (f) 750m
 - (g) 1,800m
 - (h) 390m

- 6.
- (a) 1,000g
 - (b) 100g
 - (c) 750g
 - (d) 500g
 - (e) 3,200g
 - (f) 1,320g
 - (g) 1,900g
 - (h) 3,070g

- 7.
- (a) 100ml
 - (b) 1,500ml
 - (c) 200ml
 - (d) 800ml
 - (e) 300ml
 - (f) 750ml
 - (g) 1,250ml
 - (h) 3,490ml

- 8.
- (a) 6.63m
 - (b) 6.32m
 - (c) 8.73l
 - (d) 3.54l
 - (e) 9.21kg
 - (f) 4.55kg

- 9.
- (a) 19.32m
 - (b) 19.74l
 - (c) 61.44km
 - (d) 78.66kg
 - (e) 1.27l
 - (f) 1.22l

Challenge 1: 46.88kg
Challenge 2: 1.21m

PAGE 6

1. 26cm
2. 556
3. 672
5. 52
6. 7 R2
7. 8
8. 50
9. $\frac{4}{8}$
10. 4
11. 42
12. 10
13. $\frac{7}{12}$
14. $\frac{7}{10} + \frac{6}{100}$
15. 3.56
16. €1, 50c, 5c, 2c, 1c
17. €7.15
19. 7:18
20. 7:40

PAGE 7

1.
 - (a) 24,763
 - (b) 35,786
 - (c) 29,406
 - (d) 51,347
 - (e) 74,391
 - (f) 30,285
 - (g) 53,007
 - (h) 70,007

3.
 - (a) (i) one ten thousand, three thousands, four hundreds, seven tens and eight units
(ii) $10,000 + 3,000 + 400 + 70 + 8$

 - (b) (i) three ten thousands, six thousands, nine hundreds, zero tens and five units
(ii) $30,000 + 6,000 + 900 + 5$

 - (c) (i) eight ten thousands, seven thousands, six hundreds, nine tens and zero units
(ii) $80,000 + 7,000 + 600 + 90$

- (d) (i) seven ten thousands, zero hundreds, zero hundreds, five tens and six units
(ii) $70,000 + 50 + 6$

- (e) (i) four ten thousands, eight thousands, three hundreds, two tens and two units
(ii) $40,000 + 8,000 + 300 + 20 + 2$

- (f) (i) five ten thousands, two thousands, zero hundreds, zero tens and three units
(ii) $50,000 + 2,000 + 3$

- (g) (i) seven ten thousands, two thousands, one hundred, one ten and nine units
(ii) $70,000 + 2,000 + 100 + 10 + 9$

- (h) (i) eight ten thousands, zero thousands, six hundreds, zero tens and three units
(ii) $80,000 + 600 + 3$

- (i) (i) six ten thousands, zero thousands, six hundreds, zero tens and six units
(ii) $60,000 + 600 + 6$

Challenge: 50,387

PAGE 8

1.
 - (a) 40
 - (b) 6
 - (c) 5,000
 - (d) 90,000
 - (e) 7,000
 - (f) 640
 - (g) 5,000
 - (h) 68,000
 - (i) 10
 - (j) 4,440
 - (k) 13,000
 - (l) 7,240
 - (m) 90,900
 - (n) 60,060
 - (o) 80,808

2.

- (a) 18,372
 - (b) 34,721
 - (c) 86,596
 - (d) 47,008
 - (e) 63,000
 - (f) 54,202
 - (g) 78,063
 - (h) 89,320
- 3.**
- (a) to 41,306
 - (b) to 43,106
 - (c) to 34,160
 - (d) to 31,604
 - (e) to 60,314
 - (f) to 14,306
 - (g) to 60,341
 - (h) to 13,046
 - (i) to 3,046
 - (j) to 36,140

PAGE 9

1. 2,586/43,094/56,542/
64,589/84,421/91,568

2.
 - (a) 29,756/35,874/46,328
64,373/87,006/87,600
92,815
 - (b) 38,625/38,652/38,689
49,046/49,406/71,406
71,604
 - (c) 63,121/63,199/63,200
63,201/84,121/99,099
99,101

3. €32,681/€32,679/€32,618
€23,681/€18,623/€12,836

4.
 - (a) 86,901/74,615/74,516
74,089/63,217/46,218
46,128
 - (b) 55,641/55,614/55,416
55,164/55,146/55,100
55,064
 - (c) 73,801/73,620/73,618
73,281/73,020/37,800
37,018

5.

- (a) 11,594/12,494/12,584
12,604/12,694/13,594
22,594

- (b) 35,723/36,623/36,713
36,733/36,823/37,723
46,723

- (c) 57,165/58,065/58,155
58,175/58,265/59,165
68,165

- (d) 82,240/83,140/83,230
83,250/83,340/84,240
93,240

- (e) 85,108/86,008/86,098
86,118/86,208/87,108
96,108

- (f) 65,318/66,218/66,308
66,328/66,418/67,318
76,318

6. 79,801/80,001/79,999

PAGE 10

1.
 - (a) E
C
A
B
D
 - (b) (i) 6
(ii) 9
 - (c) €5,000
 - (d) €200
 - (e) €88,264

2.
 - (a) 62
 - (b) 88
 - (c) 799
 - (d) 420
 - (e) 8,826
 - (f) 7,011
 - (g) 7,070
 - (h) 1,000

PAGE 11

1.
(a) 4,696
(b) 7,689
(c) 6,879
(d) 8,779
(e) 8,789
(f) 9,879
2.
(a) 9,778
(b) 9,777
(c) 8,597
(d) 7,759
(e) 9,780
(f) 8,248
3.
(a) 8,774
(b) 5,997
(c) 8,941

PAGE 12

1.
(i) (a) estimate $6 \times 400 = 2,400$
(b) 2,284
(ii) (a) estimate $4 \times 6,000 = 24,000$
(b) 24,803
2.
(a) (i) estimate $100 + 100 = 200$
(ii) answer: 203
(b) (i) estimate $1,000 + 600 = 1,600$
(ii) answer: 1,604
(c) (i) estimate $900 + 700 = 1,600$
(ii) answer: 1,598
(d) (i) estimate $4,000 + 7000 = 11,000$
(ii) answer: 10,975
3.
(a) (i) estimate $100 + 70 = 170$
(ii) answer: 170 years
(b) (i) estimate $100 + 100 = 200$
(ii) answer: 198 years

PAGE 13

1.

Nearest 10	Nearest 100	Nearest 1,000
(a) 370	400	
(b) 590	600	1,000
(c) 2,500	2000	2,000
(d) 6,810	6,800	7,000
(e) 8,980	9,000	9,000
(f) 9,130	9,100	9,000
(g) 11,500	11,500	11,000
(h) 19,690	19,700	20,000
(i) 26,590	26,600	27,000
(j) 47,240	47,200	47,000
(k) 61,760	61,800	62,000
(l) 85,110	85,100	85,000

2.

Nearest 10	Nearest 100	Nearest 1,000
(a) 43,550	43,600	44,000
(b) 43,190	43,200	43,000
(c) 18,900	18,900	19,000
(d) 26,200	26,200	26,000
(e) 14,860	14,900	15,000
(f) 18,560	18,600	19,000
(g) 5,950	5,900	6,000
(h) 82,290	82,300	82,000
(i) 51,700	51,700	52,000

PAGE 14

- A:** 1,019 (o)
 7,698 (d)
 7,698 (d)
 odd
- B:** 2218 (s)
 5,485 (m)
 3,545 (i)
 7,464 (l)
 5,532 (e)
 7,698 (d)
 smiled
- C:** 44 (n)
 3,545 (i)
 3,432 (b)
 3,432 (b)
 7,464 (l)
 5,532 (e)
 nibble

- D:** 3,991 (c)
 4,978 (h)
 5,532 (e)
 876 (w)
 chew

- E:** 3,705 (t)
 1,019 (o)
 876 (w)
 44 (n)
 town

- F:** 3,432 (b)
 3,983 (u)
 3,964 (r)
 4,823 (p)
 burp

- G:** 4,823 (p)
 2,607 (a)
 2,218 (s)
 2,218 (s)
 pass

- H:** 3,991 (c)
 1,019 (o)
 1,019 (o)
 2,657 (k)
 3,545 (i)
 44 (n)
 8,661 (g)
 cooking

PAGE 15

1.
(a) 47,029
(b) 64,816
(c) 75,541
(d) 65,413
(e) 89,937

2.
(a) 45,539
(b) 88,557
(c) 85,941
(d) 76,358
(e) 70,634

3.
(a) €81,338
(b) €63,713
(c) €82,027
(d) The Joker and Man V
(e) Man V, Angel and Colours
(f) €53,328

PAGE 16

1.
(a) 131
(b) 333
(c) 452
(d) 522
(e) 431
(f) 521
(g) 666
(h) 222
2.
(a) 217
(b) 418
(c) 123
(d) 775
(e) 374
(f) 647
(g) 427
(h) 474

3.
(a) 28
(b) 37
(c) 33
(d) 35
(e) 29

4.
(a) 225m
(b) 113m

PAGE 17

1.
(a) 45,412
(b) 33,288
(c) 35,659
(d) 17,302
(e) 37,459
2.
(a) 35,748
(b) 37,794
(c) 64,676
(d) 38,654
(e) 65,206
(f) 19,289
3.
(a) 39,352
(b) 43,918
(c) 16,232

- (d) 18,915
- (e) 10,153

Challenge: 37,030

PAGE 18

1.
Diamond: 11,457
Ruby: 16,614
Sapphire: 20,785
Emerald: 48,636
Topaz: 35,303

2.
(a) 95,409
(b) 97,885
(c) 60,000

Challenge: 30,356

PAGE 19

1. 1970
2. 1990
3. 1950
4.
(a) 1950, 1970, 1990, 2010
(b) 2010, 1970, 1950, 1990
5.
(a) 1950, 1990, 2010, 1970
(b) 2010, 1990, 1970, 1950
6. 16,020; 20,780; 17,840; 20,600
7. 64,000; 64,000; 53,000; 75,000
8. 37,700; 33,700; 31,400; 28,000
9. 25,824
10. 75,228
11. 47,213
12. 30,696
13. 4,760
14. 1,636
15. 4,872
16. 102,252
17. 32,704
18. 18,778

Challenge: 20,540

PAGE 20

1.
(a) false
(b) true
(c) false
(d) true
2.
(a) 5
(b) 12
(c) 4
(d) 3
(e) March
(f) Feb and April

3.
(a) 9
(b) 12
(c) 62

Challenge 1: €7.50

Challenge 2: 24

PAGE 21

1.
(a) 8
(b) (i) Leo
(ii) Rose
(c) 40kg
(d) 40kg
(e) Hannah, Lily
(f) (i) Tom, Leo, Cian
(ii) Rose, Alex, Ryan
2.
(a) (i) Mam
(ii) Clara
(b) 7
(c) 7
(d) (i) Daisy and Robbie
(ii) Olivia and Mam
(iii) Clara and Dad

3.
(a) €4.80
(b) €6.00
(c) €5.20

4.
(a) 18°C
(b) 26°C
(c) 11°C
(d) 32°C
(e) 27°C

PAGE 22

1.
(a) 6
(b) 7
(c) 5
2.
(a) 416
(b) 6m 25cm
(c) €2,594
(d) 5.02kg
(e) 1,628

3.
(a) 24
(b) 55
(c) 200

4.
(a) 8
(b) 14
(c) 20
(d) 29
(e) 17, 17
(f) 26, 26, 26

Challenge 1: 22
Challenge 2: (a) 45
(b) 3

PAGE 23

1.
(a) bar chart
(b) favourite chores
(c) vertical
(d) 1:2
2.
(a) (i) washing car
(ii) cleaning bathroom
(b) 6
(c) 45
(d) 5
(e) 9
(f) 3

PAGE 24

1.
(b) 10 hours
(c) 340 hours
(d) 10 hours
(f) 37

2.
(a) (i) size 6
(ii) size 8
(b) 3
(c) 31
(f) size 6

PAGE 25

1.
(a)

Day	Girls	Boys	Total
Fri	6	10	16
Sat	12	6	18
Sun	9	8	17

- (b) (i) 6
(ii) 10
(c) 8
(d) (i) 27
(ii) 24
(e) 51
(f) 17

2.
(b) (i) 45
(ii) 35
(c) 9
(d) (i) 10
(ii) 4
(e) 80
(f) 8

PAGE 26

1.
(b) (i) 200
(ii) 3 hrs 20 mins
(c) 50 mins
(d) (i) 160
(ii) 2 hrs 40 mins
(e) 40 mins

2.
(a)

	Serena	Will
Wk 1	6 hrs	8 hrs
Wk 2	9 hrs	9 hrs
Wk 3	9 hrs	5 hrs
Wk 4	12 hrs	10 hrs

- (c) 9 hours
(d) 8 hours

3.
 (b) 12
 (c) 13
 (d) 120
 (e) 30

PAGE 27

1.
 6 6, **6** 6 6
2. 65,587
 3. 74,321
 4. 14,589
5.
 (a) 7,170
 (b) 7,200
6. 14,000
 7. €11,500
 8. 316
 9. 216
 10. €50
 11. 20
 12. 6,968
 13. 59,995
 14. 40,003
 15. 27°C
 16. $82 - 20 = 62$
 17. €4.30
 18. 10
 19. €7
 20. 429

PAGE 28

1.
 (a) 684
 (b) 1,359
 (c) 685
 (d) 1,096
2.
 (a) 3,085
 (b) 3,168
 (c) 5,152
 (d) 7,400
3.
 (a) 580
 (b) 600
 (c) 700
 (d) 490

4.
 (a) 1,250
 (b) 2,460
 (c) 3,800
 (d) 4,720

5.
 (a) 300
 (b) 960
 (c) 2,680
 (d) 8,100

6.
 (a) 430
 (b) 760
 (c) 840
 (d) 890

7.
 (a) 1,230
 (b) 2,470
 (c) 3,560
 (d) 5,730

8.
 (a) 13,720
 (b) 35,780
 (c) 45,790
 (d) 68,790

9.
 (a) 540
 (b) 960
 (c) 1,460
 (d) 1,020

10.
 (a) 2,700
 (b) 3,340
 (c) 9,270
 (d) 20,480

11.
 (a) 10,600
 (b) 9,480
 (c) 21,350
 (d) 15,060

Maths Fact: 19,500

Challenge: (a) 2,400
 (b) 3,800
 (c) 5,200
 (d) 10,500

PAGE 29

1.
 (a) 3,738
 (b) 7,008
 (c) 8,806
 (d) 15,642

2.
 (a) 4,381
 (b) 7,080
 (c) 9,184
 (d) 13,015

3.
 (a) 11,764
 (b) 7,672
 (c) 11,130
 (d) 25,016
 (e) 16,236

4.
 (a) 22,184
 (b) 30,666
 (c) 31,265
 (d) 37,888
 (e) 26,666

5.
 (a) 21,964
 (b) 65,568
 (c) 50,666
 (d) 44,109
 (e) 77,262

Maths Fact: 5,640kg

PAGE 30

1.
 (a) 41,701
 (b) 85,124
 (c) 90,983
 (d) 74,826
 (e) 65,562
 (f) 49,275
 (g) 71,265
 (h) 60,956
 (i) 87,516
 (j) 90,338

2.
 (a) 80,068
 (b) 74,646
 (c) 63,802
 (d) 40,774
 (e) 74,536
 (f) 63,666
 (g) 84,667
 (h) 93,003
 (i) 83,328
 (j) 92,752

3. 94,320m
 4. 75,816
 5. 74,204

Maths Fact 1: 45,880

Maths Fact 2: 2,565km

PAGE 31

1.
 (a) €111.15
 (b) €108.15
 (c) €109.02
 (d) €165.69
 (e) €364.25
 (f) €260.64
 (g) €429.21
 (h) €508.32
 (i) €575.12
 (j) €578.04

2.
 (a) €120.96
 (b) €173.36
 (c) €177.84
 (d) €218.88
 (e) €168.03
 (f) €200.55

3. €123.76
 4. €310.05
 5. €226.08
 6. 140g

7.
 (a) 880.2cm
 (b) 8.80m

Maths Fact: 265.5 days

Challenge: 30.52m

PAGE 32

- 1.**
(a) €424.08
(b) €1,125.09
(c) €3,304.80
(d) €2,380.48
(e) €1,246.32
(f) €2,850.33
(g) €4,851.08
(h) €6,376.55
(i) €3,498.82
(j) €12,844.72
(k) €11,578.22
(l) €43,715.10
- 2.** €66.00
3. €852.54
4. 172.96m
5. €663.00
6. 630.04 tonnes

- 7.**
(a) €236.16
(b) €354.24
(c) €575.64
(d) €708.48

Challenge: €406.06
Maths Fact: 2,379 metres

PAGE 33

- 1.**
(a) obtuse
(b) acute
(c) acute
(d) right
(e) acute
(f) straight
(g) right
(h) reflex
(i) obtuse
(j) straight
- 2.**
(a) (i) reflex
(ii) obtuse
(b) (i) acute
(ii) reflex
(c) (i) right
(ii) reflex
(d) (i) straight
(ii) straight

- (e)** (i) obtuse
(ii) reflex
(f) (i) reflex
(ii) acute
(g) (i) reflex
(ii) right
(h) (i) straight
(ii) straight

- Challenge:** (a) 2, 5
(b) 3, 6
(c) 4, 7
(d) 5, 8
(e) 6, 9
(f) 7, 10
(g) 8, 11
(h) 9, 12
(i) 10, 1
(j) 11, 2
(k) 12, 3
(l) 1, 4

PAGE 34

- 1.**
(a) semi-circle
(b) 180°
(c) 180°
(d) 90°
(e) 360°
(f) 45°

- 2.**
(a) 100°
(b) 60°
(c) 140°
(d) 30°

- 3.**
(a) 80°
(b) 165°
(c) 110°
(d) 40°

PAGE 35

- 4.**
(a) 70°
(b) 60°
(c) 110°
(d) 40°
(e) 130°
(f) 160°
(g) 25°
(h) 180°

5.

- (a)** A 90°; B 60°; C 120°; D 90°
(b) E 100°; F 110°; G 70°; H 80°
(c) I 70°; J 40°; K 70°;
(d) L 110°; M 100°; N 50°; O 100°

Challenge 1: 330°

PAGE 36

- 1.**
(a) (i) 80°
(ii) acute
(b) (i) 65°
(ii) acute
(c) (i) 80°
(ii) acute
(d) (i) 70°
(ii) acute
(e) (i) 45°
(ii) acute
(f) (i) 38°
(ii) acute
(g) (i) 18°
(ii) acute
(h) (i) 61°
(ii) acute

- 2.**
(a) (i) 40°
(ii) acute
(b) (i) 65°
(ii) acute
(c) (i) 15°
(ii) acute
(d) (i) 131°
(ii) obtuse

- 3.**
(a) (i) 117°
(ii) obtuse
(b) (i) 55°
(ii) acute
(c) (i) 82°
(ii) acute

- 4.**
(a) (i) 49°
(ii) acute
(b) (i) 21°
(ii) acute
(c) (i) 120°
(ii) obtuse
(d) (i) 39°
(ii) acute

PAGE 37

- 1.**
(a) $45 \div 5 = 9$ so $9 \times 5 = 45$
(b) $24 \div 6 = 4$ so $4 \times 6 = 24$
(c) $24 \div 2 = 12$ so $12 \times 2 = 24$
(d) $56 \div 7 = 8$ so $8 \times 7 = 56$
(e) $36 \div 4 = 9$ so $9 \times 4 = 36$

- 2.**
(a) $36 \div 6 = 6$ so $6 \times 6 = 36$
(b) $28 \div 7 = 4$ so $4 \times 7 = 28$
(c) $60 \div 6 = 10$ so $10 \times 6 = 60$
(d) $63 \div 9 = 7$ so $7 \times 9 = 63$
(e) $72 \div 9 = 8$ so $8 \times 9 = 72$

- 3.**
(a) 7
(b) 3
(c) 8
(d) 3
(e) 9 R3

- 4.**
(a) 8 R1
(b) 6 R1
(c) 7
(d) 8
(e) 6 R3

- 5.**
(a) 9
(b) 11
(c) 6
(d) 12
(e) 9

- 6.**
(a) 5
(b) 4 R1
(c) 9
(d) 7 R1
(e) 6

- 7.**
(a) 14 R1
(b) 12 R1
(c) 12
(d) 5 R3
(e) 9

- 8.**
(a) 155

- (b) 141
- (c) 268
- (d) 159
- (e) 75

- 9.
- (a) 119
 - (b) 127
 - (c) 118
 - (d) 118
 - (e) 73

- 10.
- (a) 160 R3
 - (b) 73 R3
 - (c) 233 R2
 - (d) 122 R2

- 11.
- (a) 138 R1
 - (b) 138 R5
 - (c) 151 R1
 - (d) 121 R3

12. 29

Maths Fact: 15

PAGE 38

- 2.
- (a) 70.0
 - (b) 43.0
 - (c) 30.0
 - (d) 26.0
 - (e) 80.0

- 3.
- (a) 4.9
 - (b) 12.7
 - (c) 8.6
 - (d) 9.0
 - (e) 32.4

- 4.
- (a) 57.8
 - (b) 50.8
 - (c) 11.4
 - (d) 4.1
 - (e) 41.0

- 5.
- (a) 6.00
 - (b) 7.10

- (c) 2.00
- (d) 3.50
- (e) 4.60

- 6.
- (a) 40.00
 - (b) 16.30
 - (c) 70.40
 - (d) 30.80
 - (e) 80.00

7. 18 or 18.0

8. €9.70

Maths Fact: 19

PAGE 39

- 1.
- (a) 6
 - (b) 4
 - (c) 5
 - (d) 5
 - (e) 6
 - (f) 4
 - (g) 6
 - (h) 5

- 2.
- (a) 5 R12
 - (b) 4 R32
 - (c) 5 R13
 - (d) 5 R14
 - (e) 5 R9
 - (f) 5 R9
 - (g) 6 R12
 - (h) 6 R35

3. 8

- 4.
- (a) 6
 - (b) 22

5. 7

- 6.
- (a) 7
 - (b) 16

- 7.
- (a) 4
 - (b) €72

8. 7

Maths Fact: 6

PAGE 40

- 1.
- (a) 3
 - (b) 5
 - (c) 4
 - (d) 4
 - (e) 4 R10
 - (f) 5 R9
 - (g) 4 R16
 - (h) 4 R3
 - (i) 6
 - (j) 5
 - (k) 4
 - (l) 5 R5

- 2.
- (a) 2 R15
 - (b) 3 R13
 - (c) 4 R8
 - (d) 3 R16
 - (e) 2 R26
 - (f) 4 R15
 - (g) 5 R3
 - (h) 6 R3
- 3.
- (a) 7 R2
 - (b) 3 R3
 - (c) 6 R6
 - (d) 3 R21
 - (e) 5 R12
 - (f) 4 R16
 - (g) 5 R18
 - (h) 8 R7

4. 4

- 5.
- (a) 6 bags
 - (b) 4 left

Maths Fact: 13

PAGE 41

- 1.
- (a) 38
 - (b) 20 R13
 - (c) 25 R10
 - (d) 17 R19
 - (e) 25 R12

- 2.
- (a) 25 R20
 - (b) 28
 - (c) 27
 - (d) 18 R30
 - (e) 21

- 3.
- (a) 17
 - (b) 22 R4
 - (c) 15 R26
 - (d) 15 R22
 - (e) 13 R22

- 4.
- (a) 16 R27
 - (b) 16 R34
 - (c) 41
 - (d) 13 R13
 - (e) 14 R56

5. 28

6. 17

- 7.
- (a) 47
 - (b) 1 left

- 8.
- (a) 37
 - (b) 12

9. 16

Maths Fact: 8 groups of 2 or 16 people

PAGE 42

- 1.
- (a) (4x2)

$$\begin{array}{r} 4 \) \ 904 \\ \underline{2 \) \ 226} \\ 113 \end{array}$$
 - (b) (3x3)

$$\begin{array}{r} 3 \) \ 972 \\ \underline{3 \) \ 324} \\ 108 \end{array}$$
 - (c) (2x3)

$$\begin{array}{r} 2 \) \ 852 \\ \underline{3 \) \ 426} \\ 142 \end{array}$$
 - (d) (6x3)

$$\begin{array}{r} 6 \) \ 486 \\ \underline{3 \) \ 81} \\ 27 \end{array}$$

(e) (5x3)

$$\begin{array}{r} 5 \overline{)735} \\ 3 \overline{)147} \\ \underline{49} \end{array}$$

(f) (7x3)

$$\begin{array}{r} 7 \overline{)924} \\ 3 \overline{)132} \\ \underline{44} \end{array}$$

2. Estimate answers:

- (a) 20
- (b) 14
- (c) 5
- (d) 13
- (e) 14

3. Estimate answers:

- (a) 5
- (b) 26
- (c) 11
- (d) 18
- (e) 11

4. Estimate answers:

- (a) 13
- (b) 15
- (c) 20
- (d) 7
- (e) 14

5. Estimate answers:

- (a) 13
- (b) 13
- (c) 19
- (d) 14
- (e) 18

Maths Fact: 12cm^2

PAGE 43

- 1.**
 (a) 24 R5

$$\begin{array}{r} 27 \overline{)653} \\ \underline{-54} \\ 113 \\ \underline{108} \\ 5 \end{array}$$

Ans: 24 R5

(b) 13 R1

$$\begin{array}{r} 38 \overline{)495} \\ \underline{-38} \\ 115 \\ \underline{-114} \\ 1 \end{array}$$

Ans: 13 R1

(c) 31 R7

$$\begin{array}{r} 19 \overline{)596} \\ \underline{-57} \\ 26 \\ \underline{-19} \\ 7 \end{array}$$

Ans: 31 R7

(d) 36 R6

$$\begin{array}{r} 24 \overline{)870} \\ \underline{-72} \\ 150 \\ \underline{-144} \\ 6 \end{array}$$

Ans: 36 R6

(e) 24 R27

$$\begin{array}{r} 33 \overline{)819} \\ \underline{-66} \\ 159 \\ \underline{-132} \\ 27 \end{array}$$

Ans: 24 R27

- 2.**
 (a) 12 R11
 (b) 15 R11
 (c) 10 R31
 (d) 10 R42
 (e) 15 R33

- 3.**
 (a) 15 R2
 (b) 20 R14
 (c) 15 R35
 (d) 14 R15
 (e) 12

- 4.**
 (a) 15 R6
 (b) 11 R57
 (c) 13 R7
 (d) 36 R13
 (e) 12 R16

- 5.**
 (a) 13 R6
 (b) 12 R44
 (c) 14 R42
 (d) 16 R31
 (e) 10 R28

6. 9

- 7.**
 (a) 17
 (b) 24

Maths Fact: 16

Challenge: 22

PAGE 44

- 1.**
 1c
 5c
 20c
 50c
 €2
 €10
 €50

- 2.**
 (a) (i) €200 + €50 + €5 + €2 + €2 + 50c + 5c + 2c + 2c
 (ii) €200 + €100 + €50 + €10 + €2 + €1 + 20c + 10c + 5c
 (iii) €20 + €20 + €5 + €2 + €2 + 50c + 20c + 20c + 5c + 2c + 2c
 (iv) €100 + €50 + €20 + €5 + 50c + 20c + 20c
 (v) €200 + €200 + €50 + €2 + 50c + 10c + 5c + 1c

- (b) (i) €240.41
 (ii) €136.65
 (iii) €450.01
 (iv) €324.10
 (v) €47.34

- (c) €1,301.49
 (d) €299.94
 (e) €879.50
 (f) €1,995.37

3.

(a)

Estimate:
$5 \times €3 + 5 \times €20 = €115$

Actual cost:						
<table> <tr> <td>$€2.99 \times 5 =$</td> <td>€14.95</td> </tr> <tr> <td>$€18.75 \times 5$</td> <td>+ €93.75</td> </tr> <tr> <td></td> <td>€108.70</td> </tr> </table>	$€2.99 \times 5 =$	€14.95	$€18.75 \times 5$	+ €93.75		€108.70
$€2.99 \times 5 =$	€14.95					
$€18.75 \times 5$	+ €93.75					
	€108.70					

(b)

Estimate:
$20 \times €5 = €100$

Actual cost:
$€4.79 \times 5 = €95.80$

(c)

Estimate:
$€8.00 \div 20 = 40\text{c}$

Actual cost:
$€8.40 \div 21 = 40\text{c}$

(d)

Estimate:
$€54 \div €6 = €9$

Actual cost:
$€54.00 \div 6 = €9.00$

(e)

Estimate:
$€10 \times 30 = €300$

Actual cost:
$€9.64 \times 32 = €308.48$

PAGE 45

- 1.**
 Estimate:
 $€24 + €7 \times 5 = €59$
 Cost: €59.15

- 2.**
 Estimate: €250
 Cost: €254.78

- 3.**
 (a) (i) 1kg = €2.78
 (ii) 1kg = €1.77
 Better value (ii)

- (b) (i) 1 pencil = 25c
(ii) 1 pencil = 22c
Better value (ii)

- (c) (i) 1 orange = 19c
(ii) 1 orange = 18c
Better value (ii)

- (d) (i) 1kg = €2.98
(ii) 1kg = €1.42
Better value (ii)

- (e) (i) 1 ball = €0.61
(ii) 1 ball = €0.70
Better value (i)

4.

- (a) €1.60; €8.00
(b) €0.30; €9.00
(c) €0.16; €7.68

PAGE 46

1. €5.20

2.

- (a) (i) €2.58
(ii) €1.40
(iii) €1.33
(b) €7.50

3. €21.26

4.

- (a) 5 ½ weeks
(b) €3.80
(c) €481
(d) €499.20
(e) €328.50

5.

- (a) Estimate: €12
Actual cost: €14.04
(b) Estimate: €14
Actual cost: €13.02
(c) Estimate: €18
Actual cost: €14.31
(d) Estimate: €40
Actual cost: €38.32
(e) Estimate: €24
Actual cost: €22.44

Challenge: €73.50

PAGE 47

1.

- (a) €40
(b) €39.08
(c) €10.92
(d) €1.45
(e) €3.06
(f) €23.94
(g) tea by €1.94

2.

- (a) € 90.00
€ 39.00
€ +12.70
€ 141.70
(b) € 17.00
€ 8.97
€ +25.40
€ 51.37

- (c) € 259.00
€ 12.70
€ +4.50
€ 276.20

- (d) € 74.00
€ 15.00
€ +135.00
€ 224.00

- (e) € 135.00
€ 25.40
€ +148.00
€ 308.40

- (f) € 518.00
€ 34.00
€ +38.10
€ 590.10

- (g) € 58.50
€ 11.96
€ +7.50
€ 77.96

- (h) € 12.00
€ 185.00
€ +180.00
€ 377.00

3. €2.91

4. €71.94

Challenge: €14.05

PAGE 48

1.

- (a) (i) €1,200
(ii) €1,225
(iii) €1,260
(iv) €1,175
Best value (iv)

- (b) (i) €1,029
(ii) €1,050
(iii) €1,000
Best value (iii)

(c) €125

- (d) (i) €100
(ii) €120
Best value (i)

- (e) (i) €3,150
(ii) €155

2.

- (a) €762
(b) €834
(c) €72
(d) €127
(e) €72

PAGE 49

1. €931
2. €965
3. €178
4. €18.48

5.

- (a) €400
(b) €216
(c) €77
(d) €468
(e) €378
(f) ½ of sales

6.

- (a) €5.60
(b) €2.70
(c) €139.50
(d) €5.25
(e) €975

Challenge: (a) Pam
(b) €0.48

PAGE 50

1. 37,280
2. 30,000
3. €1,765
4. 360°
5. acute
6. obtuse
7. acute
8. 9 R4
9. €10.50
10. €15.20
11. 5 R5
12. €22.50
13. 90
14. €4.20
15. €1.75
16. 180°
17. 57 R3
18. 25
19. 59
20. 40°

PAGE 51

1.

- (a) $\frac{3}{6}$
(b) $\frac{4}{5}$
(c) $\frac{4}{6}$
(d) $\frac{1}{4}$
(e) $\frac{1}{2}$
(f) $\frac{4}{6}$

2.

- (a) >
(b) =
(c) <
(d) <
(e) =
(f) =

3.

- (a) X
(b) X
(c) X
(d) X
(e) X
(f) ✓
(g) ✓
(h) X
(i) X

4.
 (a) = $\frac{2}{5}$
 (b) = $\frac{1}{3}$
 (c) = $\frac{2}{3}$
 (d) = $\frac{3}{4}$
 (e) = $\frac{1}{2}$
 (f) = $\frac{1}{4}$
5.
 (a) $\frac{2}{3}, \frac{1}{2}, \frac{1}{4}, \frac{2}{9}, \frac{2}{12}$
 (b) $\frac{3}{4}, \frac{2}{3}, \frac{1}{2}, \frac{2}{6}, \frac{2}{12}$
 (c) $\frac{4}{5}, \frac{6}{10}, \frac{1}{2}, \frac{3}{10}, \frac{1}{5}$
 (d) $\frac{3}{4}, \frac{5}{8}, \frac{1}{2}, \frac{5}{12}, \frac{1}{4}$
 (e) $\frac{5}{9}, \frac{3}{6}, \frac{4}{12}, \frac{1}{4}, \frac{2}{9}$

PAGE 52

1.
 (a) 2
 (b) 3
 (c) 4
 (d) 5
 (e) $\frac{3}{4}$
 (f) (i) 6
 (ii) 9
 (iii) 12
 (iv) 15
2.
 (a) Jenny: 50m;
 Mary: 60m;
 Holly: 75m;
 Jill: 80m;
 Sasha: 40m
 (b) Sasha, Jenny, Mary, Holly,
 Jill
3.
 (a) $\frac{3}{6}$
 (b) $\frac{4}{10}$
 (c) $\frac{5}{5}$
 (d) $\frac{3}{3}$
 (e) $\frac{3}{3} = \frac{15}{36}$

PAGE 53

1.
 (a) $\frac{1}{2}, \frac{2}{4}, \frac{4}{8}$
 (b) $\frac{1}{3}, \frac{2}{6}, \frac{4}{12}$
 (c) $\frac{2}{3}, \frac{4}{6}, \frac{8}{12}$
 (d) $\frac{1}{2}, \frac{3}{6}, \frac{6}{12}$
2.
 (a) $\frac{6}{8} \div \frac{2}{2} = \frac{3}{4}$
 (b) $\frac{8}{12} \div \frac{4}{4} = \frac{2}{3}$
 (c) $\frac{5}{10} \div \frac{5}{5} = \frac{1}{2}$
 (d) $\frac{9}{12} \div \frac{3}{3} = \frac{3}{4}$

3.
 (a) $\frac{2}{3}$
 (b) $\frac{3}{3}$
 (c) $\frac{4}{4}$
 (d) $\frac{3}{3}$
 (e) $\frac{6}{6}$
 (f) $\frac{1}{2}$
 (g) $\frac{3}{5}$
 (h) $\frac{5}{5} = \frac{1}{4}$

4.
 (a) €12
 (b) €12
 (c) 16c
 (d) 12
 (e) 10
 (f) 15

Challenge: (a) $\frac{2}{3}$
 (b) $\frac{2}{3}$

PAGE 54

1.
 (a) $\frac{4}{5}, \frac{2}{3}, \frac{7}{9}, \frac{8}{9}, \frac{11}{12}, \frac{19}{20}$
 (b) $\frac{4}{3}, \frac{13}{12}, \frac{17}{10}, \frac{9}{8}, \frac{24}{20}, \frac{53}{50}$
2.
 (a) $1 \frac{1}{3}$
 (b) $1 \frac{4}{5}$
 (c) $\frac{7}{4}$
 (d) $2 \frac{2}{5}$
 (e) $\frac{15}{8}$
 (f) $\frac{17}{12}$
 (g) $1 \frac{11}{12}$
 (h) $\frac{11}{9}$
 (i) $\frac{9}{4}$
 (j) $\frac{17}{6}$
 (k) $2 \frac{7}{10}$
 (l) $\frac{19}{5}$

3.
 $\frac{3}{4}$ to $\frac{6}{8}$;
 $1 \frac{1}{2}$ to $\frac{3}{2}$;
 $2 \frac{1}{4}$ to $\frac{9}{4}$;
 $2 \frac{2}{4}$ to $2 \frac{1}{2}$;
 $3 \frac{1}{2}$ to $\frac{7}{2}$;
 $\frac{13}{4}$ to $3 \frac{1}{4}$

4.
 (a) $\frac{2}{4}$
 $1 \frac{1}{4}$
 $\frac{3}{2}$
 $\frac{7}{4}$
 $\frac{4}{2}$
 $2 \frac{1}{2}$

- (b) $\frac{3}{3}$
 $\frac{7}{6}$
 $1 \frac{2}{3}$
 $1 \frac{5}{6}$
 $2 \frac{2}{6}$
 $2 \frac{3}{3}$

PAGE 55

1.
 (a) 15
 (b) 25
 (c) 20
 (d) 30
 (e) 25
 (f) 32
 (g) Tom
 (h) Jim

2.
 (a) ✗
 (b) ✓
 (c) ✓
 (d) ✗
 (e) ✓
 (f) ✓
 (g) ✓
 (h) ✓

3.
 (a) €40
 (b) €18
 (c) €36
 (d) €42
 (e) €20

4.
 (a) 12
 (b) 5
 (c) 27
 (d) 1
 (e) 24
 (f) 4
 (g) 9
 (h) 11

5.
 (a) 27
 (b) 35
 (c) 63
 (d) 15
 (e) 40
 (f) 36
 (g) 88
 (h) 21

Challenge: Della

PAGE 56

1.
 (a) $\frac{3}{12}, \frac{1}{4}$
 (b) $\frac{2}{10}$ or $\frac{1}{5}$ of 10
 (c) 5 is $\frac{5}{10}$ or $\frac{1}{2}$ of 10
 (d) 8 is $\frac{8}{12}$ or $\frac{2}{3}$ of 12

2.
 (a) $\frac{4}{12}$ or $\frac{1}{3}$
 (b) $\frac{5}{10}$ or $\frac{1}{2}$
 (c) $\frac{6}{16}$ or $\frac{3}{8}$
 (d) $\frac{10}{15}$ or $\frac{2}{3}$
 (e) $\frac{6}{10}$ or $\frac{3}{5}$
 (f) $\frac{15}{20}$ or $\frac{3}{4}$
 (g) $\frac{9}{21}$ or $\frac{3}{7}$

3.
 (a) $\frac{5}{8}$
 (b) $\frac{2}{3}$
 (c) $\frac{4}{5}$
 (d) $\frac{3}{8}$
 (e) $\frac{1}{4}$
 (f) $6; \frac{1}{3}$
 (g) $\frac{1}{2}$
 (h) $\frac{1}{4}$
 (i) $\frac{1}{2}$
 (j) $\frac{1}{5}$
 (k) $\frac{1}{8}$

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1.
 (a) 5, 15
 (b) 6, 24
 (c) 4, 20
 (d) 3, 24
 (e) 5, 60

2.
 (a) 15
 (b) 9
 (c) 18
 (d) 24
 (e) 44
 (f) 21
 (g) 30
 (h) 60

- 3.**
(a) €15
(b) €45
(c) €16
(d) €27
(e) €14

4. €48

Challenge: (a) 150
 (b) 105

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1.
(a)
 Name: equilateral triangle
 Sides: 3
 Parallel: 0
 Types of angles: 3 acute
 Symmetrical: Yes

(b)
 Name: rhombus
 Sides: 4
 Parallel: 2
 Types of angles: 2 acute,
 2 obtuse
 Symmetrical: Yes

(c)
 Name: pentagon
 Sides: 5
 Parallel: 0
 Types of angles: 5 obtuse
 Symmetrical: Yes

(d)
 Name: semi-circle
 Sides: 2
 Parallel: 0
 Types of angles: 180° (straight)
 Symmetrical: Yes

(e)
 Name: isosceles triangle
 Sides: 3
 Parallel: 0
 Types of angles: 3 acute
 Symmetrical: Yes

(f)
 Name: octagon
 Sides: 8
 Parallel: 4
 Types of angles: 8 obtuse
 Symmetrical: Yes

2. (a) (b) (c) (e) (f)

- 3.**
 Regular: (a), (c), (f)
 Irregular: (b), (e)
- 4.**
(a) 4 rectangles
(b) 1 rectangle, 4 triangles,
 2 irregular hexagons or 1
 sixteen-sided polygon

- (c)** 1 rectangle, 1 circle
(d) 1 rectangle, 1 rhombus,
 1 circle, 2 semi-circles
 (2 hemispheres more
 correct)
(e) 3 rectangles, two of
 which are partially
 covered, 1 circle, 2 semi-
 circles

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- 1.**
(a) 100°
(b) 60°
(c) 70°, 70°
(d) 40°
- 2.**
(a) (i) 2cm, 4cm, 3.5cm
 (ii) 90°, 30°, 60°
 (iii) right-angled

- (b)** (i) 2.2cm, 4cm, 4cm
 (ii) 75°, 30°, 75°
 (iii) isosceles

- (c)** (i) 2.5cm, 3.5cm, 2cm
 (ii) 30°, 105°, 45°
 (iii) scalene

- (d)** (i) 2.3cm 2.3cm 2.3cm
 (ii) 60°, 60°, 60°
 (iii) equilateral

3. 30°

- 4.**
(a) 270m
(b) 4.26km

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- 1.**
(a) F, H, D
(b) A: square
 B: parallelogram
 C: quadrilateral (irregular)
 E: rectangle
 G: quadrilateral
 (irregular)
(c) square

- 2.**
(a) A, B, C, D, E
(b) A, C
(c) A, B
(d) E
(e) A, B, C, D
(f) B
(g) B, D, E
(h) four; A, B, C, D

Challenge: (a) Yes
 (b) No

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- 1.**
(a) (i) isosceles triangle
 (ii) right-angled
 (iii) scalene
 (iv) equilateral

- (b)** (i) and (iv)
4.
 square, trapezium, irregular,
 rectangle, kite-shaped

Challenge: 360°

PAGE 62

- 1.**
(a) (i) not symmetrical
 (ii) letter F
(b) (i) not symmetrical
 (ii) letter P
(c) (i) symmetrical
 (ii) letter T
(d) (i) symmetrical
 (ii) letter W
(e) (i) symmetrical
 (ii) letter V

- (f)** (i) symmetrical (x4)
 (ii) letter X
(g) (i) not symmetrical
 (ii) letter Z
(h) (i) symmetrical (x2)
 (ii) letter I
(i) (i) not symmetrical
 (ii) letter L
(j) (i) not symmetrical
 (ii) letter R
(k) (i) not symmetrical
 (ii) letter Y

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3.

	Vert	Horz	Diag	Total
(a)	1	0	2	3
(b)	1	1	2	4
(c)	1	1	0	2
(d)	0	0	2	2
(e)	1	0	0	1
(f)	1	1	4	6
(g)	1	1	6	8

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- 1.**
(b) (i) hexagons, squares
 (ii) combined
(c) (i) squares
 (ii) regular
(d) (i) squares, rectangles
 (ii) combined
(e) (i) squares, trapezia
 (ii) combined
(f) (i) squares, hexagons
 (ii) combined

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- 1.**
(a) 2
(b) 1
(c) 2
(d) 1
(e) parallelogram

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- 1.**
(a) $\frac{3}{4}$
(b) $\frac{5}{12}$
(c) $\frac{11}{9}$
(d) $\frac{8}{11}$
(e) $\frac{8}{7}$
(f) $\frac{11}{12}$
- 2.**
(a) $\frac{4}{3}$ ($1\frac{1}{3}$)
(b) $1\frac{5}{4}$ ($2\frac{1}{4}$)
(c) $2\frac{7}{6}$ ($3\frac{1}{6}$)
(d) $\frac{11}{8}$ ($1\frac{3}{8}$)
- 3.**
(a) $\frac{9}{8}$; $1\frac{1}{8}$
(b) $5\frac{2}{2}$; 6
(c) $4\frac{5}{4}$; $5\frac{1}{4}$
(d) $1\frac{13}{12}$; $2\frac{1}{12}$
(e) $7\frac{17}{11}$; $8\frac{6}{11}$
(f) $10\frac{8}{7}$; $11\frac{1}{7}$
(g) $9\frac{13}{10}$; $10\frac{3}{10}$

Challenge: $5\frac{7}{6}$ m; $6\frac{1}{6}$

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- 1.**
(a) ✓
(b) ✗
(c) ✓
(d) ✓
(e) ✗
- 2.**
(a) $\frac{3}{4}$
(b) $3\frac{7}{8}$ km
- 3.**
(a) $\frac{5}{8}$
(b) $\frac{7}{10}$
(c) $5\frac{3}{6}$
(d) $7\frac{7}{9}$
- 4.** $\frac{7}{8}$
- 5.**
(a) $3\frac{5}{4} \rightarrow 4\frac{1}{4}$
(b) $3\frac{7}{6} \rightarrow 4\frac{1}{6}$

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- 1.**
(a) $5\frac{17}{10}$; $6\frac{7}{10}$
(b) $9\frac{17}{12}$; $10\frac{5}{12}$
(c) $7\frac{11}{9}$; $8\frac{2}{9}$
(d) $11\frac{14}{12}$; $12\frac{2}{12}$
- 2.**
(a) $7\frac{11}{8}$; $8\frac{3}{8}$
(b) $3\frac{17}{12}$; $4\frac{5}{12}$
- 3.**
(a) $\frac{2}{4}$ or $\frac{1}{2}$
(b) $\frac{6}{10}$ or $\frac{3}{5}$
(c) $\frac{3}{7}$
(d) $\frac{2}{8}$ or $\frac{1}{4}$
(e) $\frac{6}{12}$ or $\frac{1}{2}$
(f) $\frac{5}{9}$
- 4.**
(a) $\frac{1}{4}$
(b) $\frac{1}{8}$
(c) $\frac{3}{10}$
(d) $\frac{1}{12}$
(e) $\frac{1}{10}$
(f) $\frac{2}{9}$

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- 1.**
(a) $1\frac{17}{12}$

$$\frac{-1\frac{9}{12}}{\frac{8}{12}}$$
(b) $1\frac{14}{11}$

$$\frac{-\frac{7}{11}}{1\frac{7}{11}}$$
(c) $3\frac{11}{8}$

$$\frac{-1\frac{7}{8}}{2\frac{4}{8}}$$
(d) $5\frac{7}{6}$

$$\frac{-3\frac{5}{6}}{2\frac{2}{6}}$$
- 2.**
(a) $\frac{7}{6}$

$$\frac{-\frac{4}{6}}{\frac{3}{6}}$$
(b) $\frac{5}{4}$

$$\frac{-\frac{2}{4}}{\frac{3}{4}}$$

(c) $\frac{14}{10}$

$$\frac{-\frac{6}{10}}{\frac{8}{10}}$$

- 3.**
(a) $1\frac{5}{8}$
(b) $2\frac{5}{10}$
(c) $3\frac{9}{12}$
(d) $3\frac{3}{12}$
(e) $5\frac{3}{10}$
(f) $4\frac{9}{10}$

4.
(a) $3\frac{15}{12}$

$$\frac{-2\frac{10}{12}}{1\frac{5}{12}}$$

(b) $2\frac{12}{10}$

$$\frac{-2\frac{9}{10}}{\frac{3}{10}}$$

(c) $3\frac{20}{12}$

$$\frac{-1\frac{11}{12}}{2\frac{9}{12}}$$

(d) $\frac{12}{8}$

$$\frac{-\frac{7}{8}}{\frac{5}{8}}$$

5.
(a) $1\frac{12}{8}$

$$\frac{-\frac{6}{8}}{1\frac{6}{8}}$$

$$1\frac{3}{4}$$

(b) $3\frac{4}{6}$

$$\frac{+1\frac{5}{6}}{4\frac{9}{6}}$$

$$5\frac{3}{6} \rightarrow 5\frac{1}{2}$$

(c) $5\frac{2}{10}$ $\rightarrow 4\frac{12}{10}$

$$\frac{-2\frac{7}{10}}{2\frac{5}{10}}$$

$$\rightarrow 2\frac{1}{2}$$

PAGE 70

- 1.**
(a) $\frac{15}{6} = \frac{5}{2} \rightarrow 2\frac{1}{2}$
(b) $\frac{1}{2} \times \frac{4}{1} \rightarrow \frac{4}{2} = 2$
(c) $\frac{3}{4} \times \frac{5}{1} \rightarrow \frac{15}{4} = 3\frac{3}{4}$
(d) $\frac{7}{10} \times \frac{3}{1} \rightarrow \frac{21}{10} = 2\frac{1}{10}$
(e) $\frac{7}{12} \times \frac{4}{1} \rightarrow \frac{28}{12} \rightarrow 2\frac{4}{12}$

$$= 2\frac{1}{3}$$

(f) $\frac{11}{12} \times \frac{6}{1} \rightarrow \frac{66}{12} \rightarrow 5\frac{6}{12}$

$$= 5\frac{1}{2}$$

- 2.**
(a) ✓
(b) ✓
(c) ✗
(d) ✓
(e) ✗
(f) ✓

- 3.**
(a) $5\frac{1}{3}$
(b) 3
(c) $6\frac{3}{4}$
(d) $5\frac{1}{4}$
(e) $\frac{2}{3}$

- 4.**
(a) $4\frac{3}{8}$ km
- 5.** $5\frac{3}{5}$
6. $3\frac{1}{8}$

Challenge: $3\frac{1}{2}$

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- 1.**
(a) 10
(b) 20
(c) $2\frac{1}{6}$
(d) $3\frac{1}{3}$
(e) $3\frac{1}{6}$
- 2.**
(a) $\frac{3}{6}, \frac{5}{12}, \frac{1}{3}, \frac{1}{4}, \frac{2}{12}$
(b) $\frac{4}{5}, \frac{7}{10}, \frac{1}{2}, \frac{2}{5}, \frac{3}{10}$
(c) $\frac{5}{6}, \frac{3}{4}, \frac{2}{3}, \frac{7}{12}, \frac{5}{10}$
- 3.**
(a) $10\frac{10}{15}$
(b) $\frac{3}{4} \times \frac{4}{4} = \frac{12}{16}$
(c) $\frac{5}{6} \times \frac{5}{5} = \frac{25}{30}$
(d) $\frac{5}{9} \times \frac{6}{6} = \frac{30}{54}$
(e) $\frac{7}{12} \times \frac{4}{4} = \frac{28}{48}$
- 4.**
(a) $\frac{6}{10} \div \frac{2}{2} = \frac{3}{5}$
(b) $\frac{9}{12} \div \frac{3}{3} = \frac{3}{4}$
(c) $\frac{8}{12} \div \frac{4}{4} = \frac{2}{3}$
(d) $\frac{6}{8} \div \frac{2}{2} = \frac{3}{4}$
(e) $\frac{3}{6} \div \frac{3}{3} = \frac{1}{2}$
- 5.**
(a) $\frac{18}{11}$
(b) $\frac{47}{7}$
(c) $5\frac{7}{8}$

- (d) $4\frac{4}{9}$
 (e) $5\frac{5}{12}$

6.
 (a) 32
 (b) 63
 (c) 60

7.
 (a) $5\frac{1}{8}$
 (b) $1\frac{7}{10}$
 (c) $2\frac{7}{8}$

8. $2\frac{11}{12}$
 9. $7\frac{7}{8}$ km
 10. $4\frac{1}{10}$

Challenge: (a) $7\frac{1}{3}$ km
 (b) $1\frac{1}{4}$ km

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- €2.35
- €9
- 26
- 36,800
- 31
- $\frac{2}{6}$ or $\frac{1}{3}$
- $\frac{9}{12}$
- $\frac{7}{8}$
- 180°
- 44,336
- 250m
- 6
- $\frac{21}{8}$
- No
- 5
- Yes
- Penny
- $4\frac{1}{12}$
- 5
- $20\frac{35}{24} = 1\frac{11}{24}$

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- 1.11
 - 28.73
- $37 + \frac{9}{10} + \frac{1}{100}$
 - $6 + \frac{7}{10} + \frac{9}{100}$

- 0.9
 - 0.23
 - 0.3
 - 0.437
 - 0.7
 - 0.035
 - 0.7
 - 0.1

- X
 - X
 - ✓
 - X
 - ✓
 - ✓
 - ✓
 - ✓

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- $\frac{2}{10}$
 - 0.2
 - $\frac{4}{100}$
 - 0.04
 - $\frac{7}{1000}$
 - 0.007
 - $\frac{3}{10}$
 - 0.3

- 0.012
 - 0.043
 - 0.09
 - 0.12
 - 0.7
 - 0.34
 - 0.9
 - 0.243

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- $2\frac{3}{100} \rightarrow 2.03$
 - $1\frac{23}{100} \rightarrow 1.23$
 - $2\frac{23}{1000} \rightarrow 0.023$
 - $2\frac{3}{10} \rightarrow 2.3$
 - $2\frac{3}{1000} \rightarrow 2.03$
 - $2\frac{23}{1000} \rightarrow 0.223$

- 1.1
 - 3.05
 - 9.009
 - 4.23
 - 10.239
 - 6.047
 - 1.111
 - 5.9

- >
 - <
 - =
 - <
 - =
 - =
 - >
 - <

5.

- $1\frac{1}{10}$, 1.001, 1.0
- $\frac{77}{100}$, 0.7, 0.077
- $4\frac{44}{100}$, $4\frac{1}{10}$, 4.04
- 3.333, $3\frac{3}{10}$, $3\frac{3}{1000}$
- 5.5, $\frac{5}{10}$, $\frac{55}{1000}$
- 22.222, $22\frac{22}{100}$, $22\frac{2}{10}$

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- $\frac{9}{10}$
 - $\frac{47}{100}$
 - $\frac{245}{1000}$
 - $\frac{91}{100}$
 - $\frac{7}{1000}$
 - $\frac{67}{1000}$
 - $\frac{2}{1000}$
 - $\frac{602}{1000}$
 - $\frac{8}{100}$
 - $\frac{1}{10}$

2.

- $2\frac{2}{100}$
 - $3\frac{800}{1000} = 3\frac{8}{10}$
 - $5\frac{450}{1000} = 5\frac{45}{100}$
 - $8\frac{880}{1000} = 8\frac{88}{100}$
 - $6\frac{90}{1000} = 6\frac{9}{100}$
 - $4\frac{700}{1000} = 4\frac{7}{10}$

- Maggie: 1.3km
 Danny: 3.6km
 Fred: 2.4km
 Conor: 1.4km
 Carlos: 1.9km

4.

- $6\frac{250}{1000}$
- $2\frac{7}{100}$
- $9\frac{45}{1000}$
- $7\frac{71}{100}$
- $4\frac{9}{1000}$
- $8\frac{3}{1000}$
- $1\frac{111}{1000}$
- $8\frac{65}{1000}$
- $3\frac{475}{1000}$
- $6\frac{307}{1000}$
- $9\frac{980}{1000}$
- $7\frac{6}{1000}$

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- 0.25
 - 0.2
 - 0.6
 - 0.5
 - 0.85
 - 0.05
 - 0.7
 - 0.65
 - 0.99
 - 0.12

2.

- $\frac{1}{5} \times \frac{2}{2} = \frac{2}{10} = 0.2$
- $\frac{9}{20} \times \frac{5}{5} = \frac{45}{100} = 0.45$
- $\frac{6}{25} \times \frac{4}{4} = \frac{24}{100} = 0.24$
- $\frac{1}{2} \times \frac{5}{5} = \frac{5}{10} = 0.5$
- $\frac{3}{4} \times \frac{25}{25} = \frac{75}{100} = 0.75$
- $\frac{4}{5} \times \frac{20}{20} = \frac{80}{100} = 0.8$
- $\frac{1}{20} \times \frac{5}{5} = \frac{5}{100} = 0.05$
- $\frac{10}{25} \times \frac{4}{4} = \frac{40}{100} = 0.4$
- $\frac{11}{20} \times \frac{5}{5} = \frac{55}{100} = 0.55$

3.

- 0.2l, 0.3l, 0.4l, 0.2l = 1.1l
- 0.5l, 0.4l, 0.25l, 0.2l = 1.35l
- 0.75l, 0.4l, 0.15l, 0.2l = 1.5l
- 0.35l, 0.15l, 0.16l, 0.2l = 0.86l

Challenge: (a) 8.25kg
(b) 1.25kg

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1.
(a) 5.059
(b) 5.275
(c) 6.397
(d) 4.95
(e) 14.07
(f) 0.087
2.
(a) 2.901
(b) 1.1
(c) 13.9
(d) 0.5
(e) 7.089
(f) 6.107
3.
(a) €10.12
(b) 113.508kg
(c) 3.259km
(d) 4.95km
(e) 0.95g
(f) 226.31km
(g) 3.319 million
(h) 0.75l

Challenge: 22.8km

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1.
(a)
- | | | | | | | |
|---|---|---|---|------------------------------|-------------------------------|--------------------------------|
| h | t | u | · | ¹ / ₁₀ | ¹ / ₁₀₀ | ¹ / ₁₀₀₀ |
| | 7 | 2 | · | 4 | | |
- | | | | | | | |
|-----|---|---|---|---|---|--|
| x10 | 7 | 2 | · | 4 | 0 | |
|-----|---|---|---|---|---|--|
- | | | | | | | |
|-----|---|---|---|---|------------------------------|---|
| th | h | t | u | · | ¹ / ₁₀ | |
| x10 | 7 | 2 | 4 | 0 | · | 0 |
- (b)
- | | | | | | | |
|---|---|---|---|------------------------------|-------------------------------|--------------------------------|
| h | t | u | · | ¹ / ₁₀ | ¹ / ₁₀₀ | ¹ / ₁₀₀₀ |
| | | 3 | · | 1 | | |
- | | | | | | | |
|-----|--|---|---|---|---|---|
| x10 | | 3 | 1 | · | 0 | 0 |
|-----|--|---|---|---|---|---|
- | | | | | | | |
|-----|---|---|---|---|------------------------------|---|
| th | h | t | u | · | ¹ / ₁₀ | |
| x10 | | 3 | 1 | 0 | · | 0 |

- (c)
- | | | | | | | |
|---|---|---|---|------------------------------|-------------------------------|--------------------------------|
| h | t | u | · | ¹ / ₁₀ | ¹ / ₁₀₀ | ¹ / ₁₀₀₀ |
| | 5 | 6 | · | 8 | | |
- | | | | | | | |
|-----|---|---|---|---|---|--|
| x10 | 5 | 6 | 8 | · | 0 | |
|-----|---|---|---|---|---|--|
- | | | | | | | |
|-----|---|---|---|---|------------------------------|---|
| th | h | t | u | · | ¹ / ₁₀ | |
| x10 | 5 | 6 | 8 | 0 | · | 0 |
- (d)
- | | | | | | | |
|---|---|---|---|------------------------------|-------------------------------|--------------------------------|
| h | t | u | · | ¹ / ₁₀ | ¹ / ₁₀₀ | ¹ / ₁₀₀₀ |
| | | 8 | · | 4 | | |
- | | | | | | | |
|-----|--|---|---|---|---|--|
| x10 | | 8 | 4 | · | 0 | |
|-----|--|---|---|---|---|--|
- | | | | | | | |
|-----|---|---|---|---|------------------------------|---|
| th | h | t | u | · | ¹ / ₁₀ | |
| x10 | | 8 | 4 | 0 | · | 0 |
- (e)
- | | | | | | | |
|---|---|---|---|------------------------------|-------------------------------|--------------------------------|
| h | t | u | · | ¹ / ₁₀ | ¹ / ₁₀₀ | ¹ / ₁₀₀₀ |
| | | 2 | · | 9 | 5 | |
- | | | | | | | |
|-----|--|---|---|---|---|--|
| x10 | | 2 | 9 | · | 5 | |
|-----|--|---|---|---|---|--|
- | | | | | | | |
|-----|---|---|---|---|------------------------------|---|
| th | h | t | u | · | ¹ / ₁₀ | |
| x10 | | 2 | 9 | 5 | · | 0 |
- (f)
- | | | | | | | |
|---|---|---|---|------------------------------|-------------------------------|--------------------------------|
| h | t | u | · | ¹ / ₁₀ | ¹ / ₁₀₀ | ¹ / ₁₀₀₀ |
| | 4 | 1 | · | 0 | 6 | |
- | | | | | | | |
|-----|---|---|---|---|---|--|
| x10 | 4 | 1 | 0 | · | 6 | |
|-----|---|---|---|---|---|--|
- | | | | | | | |
|-----|---|---|---|---|------------------------------|---|
| th | h | t | u | · | ¹ / ₁₀ | |
| x10 | 4 | 1 | 0 | 6 | · | 0 |
- (g)
- | | | | | | | |
|---|---|---|---|------------------------------|-------------------------------|--------------------------------|
| h | t | u | · | ¹ / ₁₀ | ¹ / ₁₀₀ | ¹ / ₁₀₀₀ |
| | | 2 | · | 7 | 8 | 3 |
- | | | | | | | |
|-----|--|---|---|---|---|---|
| x10 | | 2 | 7 | · | 8 | 3 |
|-----|--|---|---|---|---|---|
- | | | | | | | |
|-----|---|---|---|---|------------------------------|---|
| th | h | t | u | · | ¹ / ₁₀ | |
| x10 | | 2 | 7 | 8 | · | 3 |

- (h)
- | | | | | | | |
|---|---|---|---|------------------------------|-------------------------------|--------------------------------|
| h | t | u | · | ¹ / ₁₀ | ¹ / ₁₀₀ | ¹ / ₁₀₀₀ |
| | | 0 | · | 9 | | |
- | | | | | | | |
|-----|--|--|---|---|---|--|
| x10 | | | 9 | · | 0 | |
|-----|--|--|---|---|---|--|
- | | | | | | | |
|-----|---|---|---|---|------------------------------|---|
| th | h | t | u | · | ¹ / ₁₀ | |
| x10 | | | 9 | 0 | · | 0 |
- (i)
- | | | | | | | |
|---|---|---|---|------------------------------|-------------------------------|--------------------------------|
| h | t | u | · | ¹ / ₁₀ | ¹ / ₁₀₀ | ¹ / ₁₀₀₀ |
| | 1 | 5 | · | 4 | 0 | 7 |
- | | | | | | | |
|-----|---|---|---|---|---|---|
| x10 | 1 | 5 | 4 | · | 0 | 7 |
|-----|---|---|---|---|---|---|
- | | | | | | | |
|-----|---|---|---|---|------------------------------|---|
| th | h | t | u | · | ¹ / ₁₀ | |
| x10 | 1 | 5 | 4 | 0 | · | 7 |
- (j)
- | | | | | | | |
|---|---|---|---|------------------------------|-------------------------------|--------------------------------|
| h | t | u | · | ¹ / ₁₀ | ¹ / ₁₀₀ | ¹ / ₁₀₀₀ |
| | | 6 | · | 0 | 0 | 4 |
- | | | | | | | |
|-----|--|---|---|---|---|---|
| x10 | | 6 | 0 | · | 0 | 4 |
|-----|--|---|---|---|---|---|
- | | | | | | | |
|-----|---|---|---|---|------------------------------|---|
| th | h | t | u | · | ¹ / ₁₀ | |
| x10 | | 6 | 0 | 0 | · | 4 |
- (k)
- | | | | | | | |
|---|---|---|---|------------------------------|-------------------------------|--------------------------------|
| h | t | u | · | ¹ / ₁₀ | ¹ / ₁₀₀ | ¹ / ₁₀₀₀ |
| | | 0 | · | 3 | 7 | |
- | | | | | | | |
|-----|--|--|---|---|---|--|
| x10 | | | 3 | · | 7 | |
|-----|--|--|---|---|---|--|
- | | | | | | | |
|-----|---|---|---|---|------------------------------|---|
| th | h | t | u | · | ¹ / ₁₀ | |
| x10 | | | 3 | 7 | · | 0 |
2. 250
3. €153.80
4. 62.5 tonnes
5. €427.60
6.
(a) 823l
(b) 8,230l
(c) 82,300l
- Maths Fact: 1,156.6m

PAGE 80

1.
(a) \$102.08
(b) \$91.70
(c) \$100.03
(d) \$157.77
(e) €174.76
(f) €433.44
(g) €501.30
(h) €757.12
(i) €161.28
(j) €208.08
(k) €572.82
(l) €637.26
(m) 1,697.76
(n) 3,014.73
(o) 6,410.04
(p) 6,668.16
(q) 3,593
(r) 2,734.08
(s) 5,834.36
(t) 5,186.35
2. 78.12m
3. €838.60
4. 1,222.02l
5. 3,564.58l
6. 2,204.44km
7. €2,490.07
8. €1,897.44
9. 58.8km

Maths Fact: 64.39m

PAGE 81

1.
(a) 21.828
(b) 61.512
(c) 24.630
(d) 79.092
(e) 183.145
(f) 48.138
(g) 81.723
(h) 38.672
(i) 182.144
(j) 33.235
(k) 60.158
(l) 70.767
2.
(a) 24.703
(b) 110.496

- (c) 61.224
- (d) 153.699
- (e) 54.657
- (f) 276.064
- (g) 172.374
- (h) 45.072
- (i) 43.908
- (j) 318.675
- (k) 427.824
- (l) 654.255

- 3. 201.243kg
- 4. 77,742km
- 5. 6,837.88kg
- 6. 117.792l
- 7. 31.482km
- 8. 154.704km

Maths Fact: 30

PAGE 82

- 1.
 - (a) 66.010
 - (b) 58.995
 - (c) 203.840
 - (d) 163.305
 - (e) 237.228
 - (f) 173.477
 - (g) 170.352
 - (h) 142.652
 - (i) 452.928
 - (j) 294.964
- 2.
 - (a) 57.052
 - (b) 98.712
 - (c) 6.836
 - (d) 108.456
 - (e) 107.502
 - (f) 295.959
 - (g) 63.394
 - (h) 256.632
 - (i) 480.768
 - (j) 227.848
- 3.
 - (a) €55.05
 - (b) €170.28
 - (c) €107.92
 - (d) € 42.93
 - (e) €532.44
 - (f) €908.62

- 4. 80.925km
- 5. 283.707l
- 6. 185.597km

Maths Fact: 327.376km

PAGE 83

- 1.
 - (a) 380
 - (b) 1,300
 - (c) 1,270
 - (d) 3,070
 - (e) 24,420
 - (f) 29,180
 - (g) 36,300
- 2.
 - (a) 7,400
 - (b) 9,000
 - (c) 52,700
 - (d) 70,400
 - (e) 630
 - (f) 1,490
 - (g) 2,326
- 3.
 - (a) 9,252
 - (b) 22,043
 - (c) 50,490
 - (d) 73,884
 - (e) 9,880
 - (f) 47,268
- 4.
 - (a) 64,116
 - (b) 71,925
 - (c) 80,216
 - (d) 68,302
 - (e) 44,408
 - (f) 83,070
- 5.
 - (a) €47.81
 - (b) €46.32
 - (c) €23.8 0
 - (d) €79.62
 - (e) €332.38
 - (f) €416.64
- 6.
 - (a) €399.20
 - (b) €1,351.24

- (c) 1,686.93m
- (d) 3,560.06
- (e) €2,494.76

- 7.
 - (a) 659.71
 - (b) 3,349.92
 - (c) 2,871.68
 - (d) 2,871.65
 - (e) 4,162.68

PAGE 84

- 1.
 - (a) 85 R2
 - (b) 48
 - (c) 93
 - (d) 232 R2
 - (e) 95 R3
- 2.
 - (a) 118 R3
 - (b) 89 R2
 - (c) 166 R1
 - (d) 72 R6
 - (e) 112 R3
- 3.
 - (a) 119 R2
 - (b) 152 R5
 - (c) 101 R3
 - (d) 89 R1
 - (e) 98 R2
- 4.
 - (a) 126 R3
 - (b) 113 R2
 - (c) 101 R1
 - (d) 179 R3
 - (e) 95 R2
- 5.
 - (a) 21 R27
 - (b) 44 R14
 - (c) 35 R17
 - (d) 24 R2
 - (e) 25 R27
- 6.
 - (a) 24 R13
 - (b) 31 R16
 - (c) 17 R39
 - (d) 35 R3
 - (e) 17 R43

- 7.
 - (a) 20 R38
 - (b) 23 R1
 - (c) 17 R8
 - (d) 31 R24
 - (e) 15 R16

- 8.
 - (a) 1
 - (b) 1
 - (c) 4
 - (d) 7
 - (e) 10
 - (f) 14

- 9.
 - (a) 22
 - (b) 59
 - (c) 36
 - (d) 58
 - (e) 132
 - (f) 720

- 10.
 - (a) 3.8
 - (b) 4.3
 - (c) 4.7
 - (d) 7.7
 - (e) 7.5

- 11.
 - (a) 4.34
 - (b) 5.35
 - (c) 8.13
 - (d) 8.27
 - (e) 7.67

Maths Fact: 18.9°C

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1.
(a)
$$\begin{array}{r} 1.7 \\ 23 \overline{)39.1} \\ \underline{-23} \\ 161 \\ \underline{-161} \\ 0 \end{array}$$

Ans: 1.7

(b)
$$\begin{array}{r} 1.6 \\ 37 \overline{)59.2} \\ \underline{-37} \\ 222 \\ \underline{-222} \\ 0 \end{array}$$

Ans: 1.6

(c)
$$\begin{array}{r} 3.8 \\ 18 \overline{)68.4} \\ \underline{-54} \\ 144 \\ \underline{-144} \\ 0 \end{array}$$

Ans: 3.8

(d)
$$\begin{array}{r} 8.5 \\ 53 \overline{)450.5} \\ \underline{-424} \\ 265 \\ \underline{-265} \\ 0 \end{array}$$

Ans: 8.5

2.
(a) 1.7
(b) 4.3
(c) 5.7
(d) 3.5
(e) 5.9

3.
(a) 2.6
(b) 4.4
(c) 3.5
(d) 4.2
(e) 2.8

4.
(a) 2.8
(b) 3.7
(c) 1.7
(d) 0.7
(e) 3.6

5.
(a) 2.8
(b) 3.6
(c) 2.7
(d) 4.5
(e) 0.8
6. 5.9km
7. 2.3l
8. 2.7 times

Maths Fact: (a) 6.3°C
(b) 4.2°C

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1.
(a) €2.47
(b) €2.66
(c) €3.51
(d) €5.28
(e) €7.94

2.
(a) €1.86
(b) €1.45
(c) €2.37
(d) €3.92
(e) €4.71

3.
(a) €2.18
(b) €2.37
(c) €2.63
(d) €4.87
(e) €1.38

4.
(a) €1.26
(b) €1.68
(c) €1.96
(d) €3.48
(e) €1.74

5.
(a)
$$\begin{array}{r} 0.17 \\ 35 \overline{)5.95} \\ \underline{-35} \\ 245 \\ \underline{-245} \\ 0 \end{array}$$

Ans: 0.17

- (b) 0.14
(c) 0.23
(d) 0.45
(e) 0.62
(f) 0.53
(g) 0.35
(h) 0.24
(i) 0.17
(j) 0.26

Maths Fact: 0.36km

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1. €1.47
2. €2.38
3. 0.86l
4. 0.34
5. 2.59
6. 0.627
7. €0.76
8. 0.51
9. 21.7km
10. 5.24m
11. 1.95m
12. 4.75kg
13. €89.50
14. €0.90

Maths Fact: 7.36kg

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1. 9
2.
(a) 48
(b) 96
3. 9
4. 1,026
5. 66.285km
6. 2.7
7. €390
8. €552.96
9. 24
10. 1,070.4km
11. 1,666l
12. 258
13. €5,760
14. 87
15. 2.48m
16. 121.10m

17. 42
18. €1.23
19. 709.46km
20. €177.56

PAGE 89

1.
Across:
1. sell
4. igloos
6. sole
8. boss

Down:

1. soil
3. Liz
5. obese
7. Ollie

2.
166 → 57
4,731 → 2
3,154 → 3
1,577 → 6
498 → 19
249 → 38

3.
(a) 84 + 60 = 144
(b) 136 + 762 = 898
(c) 849 – 34 = 815
(d) 662 – 273 = 389
(e) 3,601 – 1,386 = 2,215
(f) 27,460 – 6,610 = 20,850
(g) 66,002 – 11,007 = 54,995
(h) 6,622 – 1,144 = 5,478

Challenge: (a) 75
(b) 4,500
(c) 270,000

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1.
(a) 11
(b) 111
(c) 1,111
(d) 11,111
(e) 111,111
(f) 1,111,111
(g) 1,234,567 × 9 + 8 = 11,111,111
2.
(a) 88
(b) 888

- (c) 8,888
 (d) 88,888
 (e) 888,888
 (f) 8,888,888
 (g) $9,876,543 \times 9 + 1 = 88,888,888$

3.
 (a) $- +$
 (b) $\times -$
 (c) $--$
 (d) $--$
 (e) $\div \times$
 (f) $\times +$
 (g) $- +$
 (h) $\div -$

4.
 (a) $25 + 44$

- (b) 44
 (c) 1,943

- (d) $2,636 + 4,512$

- (e) 236
 (f) 174
 (g) 253

- (h) 527×3

Challenge 1: 1,641.71

- Challenge 2: (a) 10
 (b) 100
 (c) 100,000

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1.
 (a) $- 70$
 (b) $- 9$
 (c) $- 1,000$
 (d) $- 400$
 (e) $- 3,000$
 (f) $- 200$
 (g) $- 1$
 (h) $- 90,000$
 (i) $- 60$
 (j) $- 6,000$
 (k) $- 60,000$
 (l) $- 600$

2.
 (b) $6 + 6 + 6 + 4 = 8$
 (c) $8 + 4 \times 8 + 4 + 8 + 8 = 12$
 (d) $6 + 3 \times 6 + 6 + 6 = 10$
 (e) $18 - 4 - 4 \times 18 = 10$

3.
 (a) $(8 \times 9) (70 - 80)$
 (b) $(11 \times 25) (200 - 300)$
 (c) $(156 \times 3) (400 - 500)$
 (d) $(269 \times 17) (4,000 - 5,000)$
 (e) $(36 \times 43) (1,500 - 1,600)$
 (f) $(64 \times 78) (4,000 - 5,000)$
 (g) $(348 \times 28) (9,000 - 9,999)$
 (h) $(1,246 \times 5) (6,000 - 7,000)$
 (i) $(6 \times 15) (80 - 100)$
 (j) $(14 \times 29) (400 - 500)$
 (k) $(197 \times 6) (1,100 - 1,200)$
 (l) $(411 \times 4) (1,600 - 1,700)$
 (m) $(259 \times 3) (700 - 800)$
 (n) $(19 \times 56) (1,000 - 1,100)$
 (o) $(1,253 \times 7) (8,000 - 9,000)$
 (p) $(38 \times 41) (1,400 - 1,600)$

- Challenge: (a) 3,006
 (b) 65,138
 (c) 19,781

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2.
 (a) 34
 (b) 38
 (c) 42

PAGE 93

1. 0.09
 2. $^{93}/_{1000}$
 3. 3.791
 4. (5) 37.6
 5. 65.4 (3) 7
 7. Reflex
 8. €6
 9. €12.50
 10. $^{54}/_{63} \div ^{9}/_{9} = ^{6}/_{7}$
 11. 7.674
 12. 1,638
 13. 1,700kg
 14. €8,400
 15. 42.084l
 16. €960
 17. €24
 18. $^{7}/_{12} \times ^{5}/_{5} = ^{35}/_{60}$

19. 12

20. 36

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1.
 (a) 25mm
 (b) 24mm
 (c) 25mm
 (d) 20mm
 (e) 33mm

2.

- (i) 28mm or 2cm 8mm
 (ii) 13mm or 1cm 3mm
 (iii) 20mm or 2cm 0mm
 (iv) 24mm or 2cm 4mm
 (v) 41mm or 4cm 1mm
 (vi) 31mm or 3cm 1mm
 (vii) 11mm or 1cm 1mm
 (viii) 7mm or 0cm 7mm

3.

- (c) 60mm or 6cm 0mm

Maths Fact: 600mm

PAGE 95

1.
 (a) 1cm 8mm
 (b) 27mm
 (c) 1cm 1mm

2.

- (a) 15mm
 (b) 3cm 6mm
 (c) 45mm

3.

- (a) 5cm 1mm
 (b) 7cm 0mm
 (c) 62mm

4.

- (a) 90mm
 (b) 8cm 3mm
 (c) 4cm 9mm

5.

- (a) 76mm
 (b) 33mm
 (c) 5cm 7mm

6.

- (a) $36\text{mm} - 3^{6}/_{10}\text{cm} = 3.6\text{cm}$
 (b) $54\text{mm} = 5^{4}/_{10}\text{cm} = 5.4\text{cm}$

(c) $47\text{mm} = 4^{7}/_{10}\text{cm} = 4.7\text{cm}$

(d) 63mm = 6.3cm

(e) 91mm = 9.1cm

(f) 31mm = $3^{1}/_{10}\text{cm}$

(g) 77mm = $7^{7}/_{10}\text{cm}$

(h) 84mm = $8^{4}/_{10}\text{cm}$

(i) 68mm = $6^{8}/_{10}\text{cm}$

(j) 89mm = $8^{9}/_{10}\text{cm}$

(k) 94mm = $9^{4}/_{10}\text{cm}$

7.

- (a) 5cm 1mm
 (b) 10.2cm
 (c) 24cm 2mm
 (d) 26.00cm
 (e) 22cm 5mm
 (f) 83.3cm

8.

- (a) 3cm7mm
 (b) 4.1cm
 (c) 4cm 4mm
 (d) 13.9cm
 (e) 21cm 0mm
 (f) 11.9cm

9. 27.4cm

Maths Fact: 15

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1.
 (a) 17cm 5mm
 (b) 56.4cm
 (c) 60cm 8mm
 (d) 123.00cm
 (e) 128cm 1mm
 (f) 376.2cm

2.

- (a) 2cm 4mm
 (b) 2.7cm
 (c) 5cm 3mm
 (d) 3.8cm
 (e) 10cm 7mm
 (f) 2cm 4mm
 (g) 7.2cm
 (h) 8cm 3mm
 (i) 6.6cm
 (j) 8cm 2mm
 (k) 23.4cm
 (l) 12.3cm

3.
 (a) 22cm
 (b) 220mm

4.
 (a) 78cm
 (b) 780mm

5.
 (a) 158mm
 (b) 217mm

6. 222.3cm

7.
 (a) 10.8cm
 (b) 8.1cm

8. 116.2cm

Maths Fact: 1,274cm

Challenge: 9.48cm

PAGE 97

1.
 (a) metre stick
 (b) ruler
 (c) metre stick
 (d) trundle wheel
 (e) ruler
 (f) ruler

2.
 (b) 12.5mm
 (c) different answers
 (d) 1.5m
 (e) 10mm
 (f) 1.04m

3. 48.8cm
 4. 334.4cm
 5. 30

Maths Fact: 50.6 metres

PAGE 98

1.
 (b) $16/100m = 0.16m$
 (c) $7/100m = 0.07m$
 (d) $22/100m = 0.22m$
 (e) $49/100m = 0.49m$

- (f) $80/100m = 0.8m$
 (g) $154/100m = 1.54m$
 (h) $305/100m = 3.05m$

2.
 (b) 7cm
 (c) 261cm
 (d) 1728cm
 (e) 305cm

3.
 (a) 1.69m
 (b) 7.88m
 (c) 7.07m
 (d) 10.78m
 (e) 9.63m
 (f) 13.28m

4.
 (a) 27.54m
 (b) 25.69m
 (c) 20.34m
 (d) 33.72m
 (e) 103.04m
 (f) 46.98m

5.
 (a) 4.7m
 (b) 1.61m
 (c) 2.48m
 (d) 0.85m
 (e) 0.67m
 (f) 0.46m

6.
 (a) 0.640km
 (b) 0.509km
 (c) 0.253km
 (d) 0.017km
 (e) 0.004km

7.
 (a) 5,173m
 (b) 2,403m
 (c) 7,290m
 (d) 3,006m
 (e) 352m
 (f) 207m
 (g) 5,800m
 (h) 6m

8.
 (a) 22.680km
 (b) 19.044km
 (c) 17.311km
 (d) 24.125km
 (e) 5.863km
 (f) 0.763km
 (g) 3.600km
 (h) 2.850km
 (i) 14.655km
 (j) 11.427km

Maths Fact: 9

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1.
 (a) 18m
 (b) 22m
 (c) 16m
 (d) 18m
 (e) 30m
 (f) 20m

2.
 (a) 2,244m
 (b) 2.244km

3. 347m

4.
 (a) Niall’s
 (b) 0.06m

5. 57.14m
 6. 64.80m

Maths Fact: 80mm

PAGE 100

1.
 (a) 14.5km
 (b) 11.6km
 (c) 34.8km

2. 3,449km 200m

3.
 (a) 420cm
 (b) 4,200mm

4. 471.6cm
 5. 26.39m

6. 9.44m
 7. 12.25km

8.
 (a) 4.826km
 (b) 12.60m
 (c) 6.12m
 (d) 49.5km
 (e) 33.745km
 (f) 0.081km
 (g) 5.285km
 (h) 191.1cm
 (i) 31.8km
 (j) 1.711km
 (k) 8.78m
 (l) 0.727km
 (m) 42.6cm
 (n) 6.85cm
 (o) 11.712km
 (p) 6.832km
 (q) 2.533km
 (r) 8.657km

Challenge: (a) 73.689km
 (b) 15.789km

Maths Fact: (a) 444,200m
 (b) 444.2km

PAGE 101

1.
 (a) $10/100 = 10\%$
 (b) $50/100 = 50\%$
 (c) $30/100 = 30\%$
 (d) $6/100 = 6\%$
 (e) $3/100 = 3\%$
 (f) $1/100 = 1\%$
 (g) 44%

2.
 (a) 9%
 (b) 47%
 (c) 1%
 (d) 17%
 (e) 50%
 (f) 27%
 (g) 100%
 (h) 98%

3.
 (a) 20%
 (b) 30%

- (c) 40%
(d) 10%

4.

- (a) 9%
(b) 50%
(c) 23%
(d) 70%
(e) 47%
(f) 80%
(g) 21%
(h) 100%
(i) 90%
(j) 99%

5.

- (a) 9%, $\frac{9}{10}$, $\frac{99}{100}$
(b) 34%, $\frac{42}{100}$, 43%
(c) $\frac{3}{100}$, $\frac{3}{10}$, 33%
(d) 5%, 50%, $\frac{55}{100}$
(e) $\frac{1}{100}$, 10%, 100%
(f) 8%, $\frac{8}{10}$, 88%
(g) $\frac{1}{100}$, $\frac{1}{10}$, 11%
(h) 2%, $\frac{2}{10}$, 22%

6.

- (a) 30%
(b) 50%
(c) 66%
(d) 60%
(e) 45%
(f) 20%

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1.

- (a) 50%
(b) 40%
(c) 25%
(d) 60%

2.

- (a) 80%
(b) 35%
(c) 50%
(d) 40%
(e) 70%
(f) 48%

3.

- (a) 63%
(b) 58%
(c) 82%

- (d) 55%
(e) 80%
(f) 80%
(g) 60%
(h) 90%

5.

- (a) $\frac{43}{100}$
(b) $\frac{7}{100}$
(c) $\frac{99}{100}$
(d) $\frac{71}{100}$
(e) $\frac{1}{100}$

6.

- (a) $\frac{1}{2}$
(b) $\frac{1}{5}$
(c) $\frac{2}{25}$
(d) $\frac{9}{20}$
(e) $\frac{1}{25}$
(f) $\frac{9}{10}$
(g) $\frac{3}{4}$
(h) $\frac{9}{25}$

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1.

- (a) =
(b) >
(c) <
(d) >
(e) >
(f) >
(g) >
(h) <

2.

- (a) $\frac{1}{10}$
(b) $\frac{1}{5}$
(c) $\frac{1}{20}$
(d) $\frac{1}{4}$
(e) $\frac{17}{100}$
(f) $\frac{12}{100}$ or $\frac{3}{25}$

3.

- $100\% \rightarrow \frac{2}{2}$; $15\% \rightarrow \frac{3}{20}$; $2\% \rightarrow \frac{1}{50}$; $75\% \rightarrow \frac{3}{4}$; $9\% \rightarrow \frac{9}{100}$; $4\% \rightarrow \frac{2}{50}$; $50\% \rightarrow \frac{1}{2}$; $10\% \rightarrow \frac{1}{10}$

4.

- (a) 13%
(b) 37%
(c) 41%
(d) 76%

5.

- (a) $\frac{1}{10} + \frac{7}{100}$
(b) $\frac{2}{10} + \frac{9}{100}$
(c) $\frac{5}{10} + \frac{1}{100}$
(d) $\frac{9}{10} + \frac{6}{100}$

6.

- (a) 9
(b) 10
(c) 3
(d) 43
(e) 2
(f) 7
(g) 10
(h) 30

7.

- (a) 10
(b) 20
(c) 12
(d) 30
(e) 36
(f) 18

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1.

- (a) 100
(b) 60
(c) 80
(d) 180
(e) 150
(f) 130
(g) 140
2.
(a) 150
(b) 90
(c) 120
(d) 270
(e) 225
(f) 195
(g) 210

3.

- (a) 90km
(b) 135km
(c) 162km
(d) 72km

4.

- (a) €200
(b) €150
(c) €150

5.

Killshanny Nat. School
Won: 15
Drew: 2
Lost: 3
Goals for: 80
Goals against: 40
Points: 32

Killard Educate Together

Won: 10
Drew: 5
Lost: 5
Goals for: 64
Goals against: 48
Points: 25

Gaelscoil Naomh Bríd

Won: 6
Drew: 6
Lost: 8
Goals for: 40
Goals against: 28
Points: 18

Challenge: (a) 20%
(b) 30%
(c) 50%

PAGE 105

1.

- (a) 1, 2, 3, 4, 6, 8, 12, 24
(b) (i) 30
(ii) 20
(iii) 15
(iv) 12
(v) 10
(vi) 6
(vii) 5
(viii) 3
(ix) 2
(x) 1

2.

- (a) (ii)
(b) (v)
(c) (vii)
(d) (iii)
(e) (ix)
(f) (i)
(g) (vi)
(h) (x)
(i) (iv)
(j) (viii)

3.

- (b) $3\frac{1}{2}$
(c) 2hrs 50mins

- (d) 3hrs 5mins
- (e) 1 ¼
- (f) 1hr 43mins

Challenge: (a) 145mins
(b) 2 ⁵/₁₂hrs

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- 1.**
- (a) 7hrs 12mins
 - (b) 6hrs 13mins
 - (c) 8hrs 15mins
 - (d) 3hrs 24mins

- 2.**
- (a) 7hrs 29mins
 - (b) 8hrs 21mins
 - (c) 1hr 16mins
 - (d) 7hrs 2mins
 - (e) 1hr 50mins

- 3.**
- (a) 1hr 38mins
 - (b) 2hrs 47mins
 - (c) 2hrs 43mins
 - (d) 6hrs 49mins

- 4.**
- (a) 4hrs 25mins
 - (b) 3hrs 18mins
 - (c) 1hr 42mins
 - (d) 6hrs 6mins
 - (e) 2hrs 48mins

- 5.**
- (a) 0hrs 53mins
 - (b) 2hrs 37mins
 - (c) 11hrs 15mins
 - (d) 9hrs 16mins
 - (e) 7hrs 19mins
 - (f) 7hrs 24mins

Challenge: (a) 27mins
(b) 135mins

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- 2.**
- (a) 12.10am
 - (b) 11.45am
 - (c) 4.20am
 - (d) 5.35pm
 - (e) 3.50pm

- (f) 12.25pm
- (g) 5.50am
- (h) 6.32pm
- (i) 12.40am

- 3.**
- (a) 03:15
 - (b) 13:25
 - (c) 09:35
 - (d) 15:20
 - (e) 21:20
 - (f) 05:40
 - (g) 19:45
 - (h) 21:50

- 4.**
- (a) 6.05am
 - (b) 2.40pm
 - (c) 8.18am
 - (d) 3.46pm
 - (e) 12.34pm
 - (f) 5.17pm
 - (g) 10.05pm
 - (h) 11.56pm
 - (i) 7.01am
 - (j) 1.26pm
 - (k) 6.19pm
 - (l) 11.12pm

Challenge: 35mins

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- 1.**
- (a) (i) 2.50pm
(iii) 14:50

- (b) (i) 12.17am
(iii) 00:17

- (c) (i) 7.45pm
(iii) 19:45

- (d) (i) 8.20pm
(iii) 20:20

- (e) (i) 2.43pm
(iii) 14:43

- (f) (i) 11.59pm
(iii) 23:59

- (g) (i) 1.38pm
(iii) 13:38

- 2.**
- (a) 4hrs 23mins
 - (b) 4hrs 34mins
 - (c) 8hrs 41mins
 - (d) 7hrs 8mins
 - (e) 4hrs 05mins
 - (f) 6hrs 20mins

- 3.**
- (a) 2hrs 09mins
 - (b) 14:54
 - (c) 1hr 48mins
 - (d) 10hrs 24mins
 - (e) 9hrs 15mins
 - (f) €92.50

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- 2.**
- (b) 2hrs 42mins
 - (c) Bus 2: 3hrs 13mins;
Bus 3: 3hrs 17mins;
Bus 4: 3hrs 8mins;
Bus 5: 3hrs 30mins
 - (d) Bus 4
 - (f) full leaving Cork
 - (g) Bus 3
 - (h) 2hrs 12mins

Challenge: Bus 3

PAGE 110

- 1.** 45mins
- 2.** 10:10
- 3.** 45mins
- 4.** 1hr 55mins
- 5.** 1hr 28mins
- 6.** 1hr 39mins
- 7.** 2 hrs 7mins
- 8.** 1hr 09mins
- 9.** 3hrs
- 10.** 1hr 45mins
- 11.** 10.17pm
- 12.** 37mins
- 13.** 3 hrs 25mins
- 14.** 3hrs 51mins
- 15.** 13hrs 47mins

Challenge: (a) Emer
(b) 32mins

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- 1.**
- (a) 5.43am
 - (b) 11.17am
 - (c) 3.40pm
 - (d) 7.54pm
 - (e) 11.23pm

- 2.**
- (a) 00:17
 - (b) 09:25
 - (c) 13:53
 - (d) 17:38
 - (e) 22:22

- 3.**
- (a) 00:25
 - (b) 07:40
 - (c) 15:35
 - (d) 17:37
 - (e) 10:26
 - (f) 22:27

- 4.**
- (a) 09:52
 - (b) 12:11
 - (c) 16:03
 - (d) 10:56
 - (e) 19:45
 - (f) 22:09

- 5.**
- (a) 09:27
 - (b) 12:12
 - (c) 14:49
 - (d) 17:34
 - (e) 20:12

- 6.** 6hrs 43mins
- 7.** 12hrs 52mins
- 8.** 16:34
- 9.** 10:47
- 10.** 5hrs 40mins
- 11.** 8hrs 50mins

Challenge: 5hrs 39mins

PAGE 112

- 1.**
- (a) cm²
 - (b) cm²
 - (c) m²

- (d) cm^2
 (e) m^2
 (f) cm^2
 (g) m^2
 (h) m^2
 (i) cm^2
 (j) m^2

2.
 (a) 16cm^2
 (b) 18cm^2
 (c) 12cm^2
 (d) 22cm^2
 (e) 25cm^2
 (f) 13cm^2
 (g) 13cm^2

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1.
Head: 12cm^2 , 16cm ;
Eye: 1cm^2 , 4cm ;
Body: 40cm^2 , 28cm ;
Tail: 3cm^2 , 8cm ;
Leg: $(x2)$, 6cm^2 , 16cm ;
Whole dog: 61cm^2 , 56cm

3.
 (a) (i) 36cm^2
 (ii) 12cm^2
 (iii) 18cm^2

- (b) (i) 16cm
 (ii) 24cm

- (c) $\frac{2}{3}$
 (d) square
 (e) $\frac{1}{3}$

4.
 (i) (a) 14cm^2
 (b) 30cm

- (ii) (a) 14cm^2
 (b) 18cm

- (iii) (a) 11cm^2
 (b) 24cm

- (iv) (a) 9cm^2
 (b) 20cm

- (v) (a) 16cm^2
 (b) 24cm

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1.
 (a) 12cm^2
 (b) 9cm^2
 (c) 12cm^2
 (d) 20cm^2
 (e) 15cm^2

2.
 (a) 10cm^2
 (b) 4cm^2
 (c) 54cm^2
 (d) 24cm^2
 (e) 24cm^2
 (f) 72cm^2

3.
 (a) 18cm^2
 (b) 14cm^2
 (c) 24cm^2
 (d) 18cm^2

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1.
 (a)
 Length: 4cm
 Width: 2cm
 Area: 8cm^2
 Perimeter: 12cm

- (b)
 Length: 3cm
 Width: 3cm
 Area: 9cm^2
 Perimeter: 12cm

- (c)
 Length: 5cm
 Width: 4cm
 Area: 20cm^2
 Perimeter: 18cm

- (d)
 Length: 4cm
 Width: 3cm
 Area: 12cm^2
 Perimeter: 14cm

2.
 (a) 250m^2
 (b) 315cm^2
 (c) 456m^2
 (d) 126cm^2

3.
 (a) 76cm
 (b) 361cm^2
 (c) 152cm

4.
 (a) $\text{€}483$
 (b) $\text{€}17$

5.
 (a) 34m
 (b) $\text{€}238$
 (c) $\text{€}1,056$
 (d) $\text{€}444$

Challenge: 64cm^2

PAGE 116

1.
 (a) 55cm^2
 (b) 42m^2
 (c) 96cm^2
 (d) 31.5cm^2
 (e) 51cm^2
 (f) $1,425\text{m}^2$
 (g) 133m^2
 (h) 128cm^2
 (i) 195cm^2
 (j) 408cm^2
 (k) 672m^2
 (l) $1,422\text{cm}^2$

2.
 (a) 4cm
 (b) 8cm
 (c) 8m
 (d) 19m

3.
 (a) 20cm
 (b) 38m
 (c) 46cm
 (d) 48m

4.
 (a) 35cm^2
 (b) 66m^2
 (c) 168m^2
 (d) 322cm^2

5.
 (a)
 Length: 9cm
 Width: 3cm
 Area: 27cm^2
 Perimeter: 24cm

- (b)
 Length: 6cm
 Width: 5cm
 Area: 30cm^2
 Perimeter: 22cm

- (c)
 Length: 9cm^2
 Width: 7cm
 Area: 63cm^2
 Perimeter: 32cm

- (d)
 Length: 8cm
 Width: 6cm
 Area: 48cm^2
 Perimeter: 28cm

- (e)
 Length: 11m
 Width: 8m
 Area: 88m^2
 Perimeter: 38m

- (f)
 Length: 15m
 Width: 12m
 Area: 180m^2
 Perimeter: 54m

- (g)
 Length: 24m
 Width: 13m
 Area: 312m^2
 Perimeter: 74m

- (h)
 Length: 15m
 Width: 14m
 Area: 210m^2
 Perimeter: 58m

PAGE 117

1.
 (a) $x = 4\text{cm}$, $y = 5\text{cm}$
 (b) $x = 2\text{cm}$, $y = 5\text{cm}$
 (c) $x = 6\text{cm}$, $y = 6\text{cm}$

2.
 (a)
 Perimeter: 30cm
 Area: 45cm^2

(b)
Perimeter: 54cm
Area: 92cm²

(c)
Perimeter: 34cm
Area: 63cm²

(d)
Perimeter: 42cm
Area: 74cm²

(e)
Perimeter: 74cm
Area: 92cm²

(f)
Perimeter: 76cm
Area: 300cm²

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1.
(i) 68cm
(ii) 280cm²

2.
A 30cm; 48cm²
B 26cm; 36cm²
C 26cm; 34cm²
D 26cm; 40cm²
E 28cm; 45cm²
F 32cm; 55cm²

3. (i) F
(ii) C

4. (i) F
(ii) B, C and D

5. B, C and D

Challenge: 22cm²

PAGE 119

1. 8.7cm
2. 3.39m
3. 3,495m
4. 76cm
5. 0.25
6. €8
7. 0.008
8. 26%
9. €27
10. $\frac{9}{25}$
11. €22
12. 150ml

13. 160
14. 2hrs 52mins
15. 17:20
16. 16:52
17. 6cm²
18. 34cm
19. 93mins
20. 0.42

PAGE 120

1.
(a) 0.99
(b) $7\frac{4}{5}$
(c) 5.023
(d) 11.011
(e) $5\frac{1}{5}$

2.
(a) $\frac{4}{5}$
(b) 40%
(c) $\frac{1}{25}$
(d) 5%
(e) 24%

3.
(a) 0.23
(b) 90%
(c) 80%
(d) 0.7
(e) 0.07
(f) 1%
(g) 40%
(h) 0.03
(i) 10%
(j) 100%

4.
(a) (i) $\frac{3}{10}$
(ii) 0.3
(iii) 30%
(b) (i) $\frac{2}{5}$
(ii) 0.4
(iii) 40%
(c) (i) $\frac{1}{10}$
(ii) 0.1
(iii) 10%
(d) (i) $\frac{3}{4}$
(ii) 0.75
(iii) 75%

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1.

F		$\frac{1}{2}$	$\frac{99}{100}$	$\frac{1}{100}$	$\frac{1}{1}$	$\frac{2}{5}$
D	0.29	0.99	0.1	1.0	0.6	
%	29	50	10	1	60	40

2.
(a) 0.01
(b) $\frac{9}{100}$
(c) 0.6
(d) 4%
(e) $\frac{5}{100}$
(f) 20%
(g) 0.7
(h) 0.06

5.
(a) 3
(b) 5
(c) 11
(d) 5
(e) 18
(f) 2
(g) 25
(h) 21
(i) 18
(j) 9

PAGE 122

1.
(a) 30
(b) 12
(c) 6
(d) 3
(e) 9

2.
(a) 20m
(b) 500g
(c) 100ml
(d) €0.37
(e) €120
(f) 1,500g
(g) 800m
(h) 250l
(i) 30mins
(j) 3cm
(k) 6mins
(l) 30cm

3.
(a) (i) 0.9 million
(ii) 3.6 million

(b) (i) 6hrs
(ii) 18hrs

(c) 48km/h

(d) (i) 81kg
(ii) 21%

4. 100m

Challenge: (a) 500ml
(b) 750ml
(c) 800ml

PAGE 123

1.
(a) 12
(b) 20
(c) 30
(d) 20
(e) 30
(f) 400
(g) 100
(h) 20
(i) 500
(j) 10

2. 1,500g
3. 30
4. 2km
5. 4
6. 90
7. 80
8. 28mins
9. €6
10. 9
11. 14km
12. 64
13. 90

Challenge: 5%

PAGE 124

1.
(a) 12
(b) 9
(c) 15
(d) 7

- (e) 87
 - (f) 280
 - (g) 202
 - (h) 75
 - (i) 18
 - (j) 84
2. €12.50
3. 1hr 15mins
4. 14
5. 173
6. 108
7. 255
8. 1,650m
9. €21.76

Challenge: 171

PAGE 125

- 1.
- (a) 6
 - (b) gold coins
 - (c) 4
 - (d) silver bars
 - (e) watches
 - (f) gold bars
 - (g) money bags
 - (h) silver coins
 - (i) treasure chest

- 3.
- (a) 2
 - (b) 2
 - (c) 5
 - (d) 2
 - (e) 4
 - (f) 6
 - (g) 6
 - (h) 8
 - (i) 10

PAGE 126

- 1.
- (a) +10°C
 - (b) 37°C
 - (c) 0°C
 - (d) -15°C
 - (e) -20°C
 - (f) +25°C

- 2.
- (a) B
 - (b) E
 - (c) C
 - (d) (i) +25°
(ii) -20°
(iii) +27°
(iv) -30°
(v) +45°
(vi) -5°
(vii) +57°
(viii) -12°

Challenge: 41°C

PAGE 127

1. Cape town
2. Winnipeg
3. 8°C
4. 1°C
5. 25°C
6. 14°C
7. 9°C
8. Helsinki
9. Moscow
10. 6°C
11. 7°C
12. 22°C
13. 7°C
14. 4°C
15. 41°C

- 16.
- Cork +6°C**
- + 5°C: +11°C
 - 3°C: +3°C
 - + 15°C: +21°C
 - 13°C: -7°C

- New York -1°C**
- + 5°C: +4°C
 - 3°C: -4°C
 - + 15°C: +14°C
 - 13°C: -14°C

- Cape Town +27°C**
- + 5°C: +32°C
 - 3°C: +24°C
 - + 15°C: +42°C
 - 13°C: +14°C

- Oslo -8°C**
- + 5°C: -3°C
 - 3°C: -11°C
 - + 15°C: +7°C
 - 13°C: -21°C

Helsinki -2°C

- + 5°C: +3°C
- 3°C: -5°C
- + 15°C: +13°C
- 13°C: -15°C

Hong Kong +18°C

- + 5°C: +23°C
- 3°C: +15°C
- + 15°C: +33°C
- 13°C: +5°C

Winnipeg -14°C

- + 5°C: -9°C
- 3°C: -17°C
- + 15°C: +1°C
- 13°C: -27°C

PAGE 128

- 1.
- (a) GD +15; pts 61
 - (b) GD +5; pts 60
2. W: 15; L: 9

- 3.
- (a) 6
 - (b) 13

4. GD: -16; pts: 33

- 5.
- Barking Dogs:**
Position 11; pts: 30
- Proud Penguins:**
Position 10; GD: -21
- Clever Cats:**
Position 12; GD: 26, pts: 28
- Skipping Kangaroos:**
Position 9; GD: 18, pts: 31

PAGE 129

- 1.
- (a) 6
 - (b) 30
 - (c) 0.009
 - (d) 10
 - (e) 35
 - (f) $\frac{4}{1000}$, 4%, 0.44
 - (g) 0.075
 - (h) $3 \frac{29}{1000}$
 - (i) 32
 - (j) 500
 - (k) 45mins
 - (l) 85%

- (m) 4%
- (n) $\frac{3}{25}$

- 2.
- (a) €10
 - (b) €70
 - (c) €1.50
 - (d) €68
 - (e) €184
 - (f) €67

- 3.
- (a) €150
 - (b) €45
 - (c) €7.50
 - (d) €63
 - (e) €15
 - (f) €21
 - (g) €90
 - (h) €24
 - (i) €210
 - (j) €84

PAGE 130

- 1.
- (a) 1,200l
 - (b) 15
 - (c) 2.5kg
 - (d) 1.650l
- 2.
- (a) €2
 - (b) 20c or €0.20
 - (c) 20c or €0.20
 - (d) €0.20

- 3.
- (a) €10.90
 - (b) €18.32
 - (c) €20.14
 - (d) €18
 - (e) €9

PAGE 131

- 1.
- (a) (i) 0.4
(ii) 40%
 - (b) (i) 0.25
(ii) 25%
 - (c) (i) 0.85
(ii) 85%

- (d) (i) 0.68
(ii) 68%

- (e) (i) 0.65
(ii) 65%

2.
(a) 50%
(b) 75%
(c) 59%
(d) 94%
(e) 12%
(f) 80%

3.
(a) 16.666%
(b) 11.111%
(c) 8.333%
(d) 12.5%
(e) 66.666%
(f) 55.555%
(g) 58.333%
(h) 83.333%
(i) 37.5%
(j) 77.777%

4.
 $\frac{5}{8}$ (a) 0.625 (b) 62.5%

5.
(a) 0.416
(b) 41.666%

- Challenge: (a) (i) 0.583
(ii) 58.333%

- (b) (i) 0.687
(ii) 68.75%

PAGE 132

1.
(i) Rob
(ii) Fred
(iii) Janet
(iv) Ava
2.
(a) $\frac{7}{20} = 35\%$
(b) $\frac{2}{3} = 66.666\%$
(c) $\frac{40}{200} = 20\%$
(d) $\frac{1}{3} = 33.333\%$

3.
(a) $\frac{5}{9}$, 0.57, 57.5%
(b) $\frac{5}{16}$, $\frac{8}{25}$, 39%
(c) 40%, $\frac{5}{12}$, 0.42
(d) $\frac{1}{12}$, 13%, $\frac{3}{16}$
(e) $\frac{2}{3}$, 0.85, $\frac{11}{12}$
(f) $\frac{24}{25}$, 0.975, 99%
(g) 62%, 0.64, $\frac{2}{3}$
(h) 81%, $\frac{7}{8}$, 0.88
(i) $\frac{3}{4}$, 0.775, 78%

4.
(a) 36%
(b) 10%
(c) 51%
(d) 40%

- Challenge: (a) 2 teaspoons
(b) 6
(c) 7
(d) 4.5

PAGE 133

1.
(a) 30
(b) 14
(c) 256
(d) 234
(e) 47
2.
(a) 10
(b) 39
(c) 842
(d) 462
(e) 286

3.
(a) 10
(b) 9
(c) 13
(d) 93
(e) 23
(f) 31
(g) 326
(h) 15
(i) 109
(j) 68
(k) 141

4.
(a) €275
(b) €338
(c) €94
5. $\frac{3}{5}$, $\frac{9}{16}$, $\frac{1}{2}$, $\frac{4}{8}$, $\frac{7}{11}$

PAGE 134

1.
(a) €41.25
(b) €22.80
(c) €11.25
(d) €15.02
2.
(a) (i) $1\frac{1}{4}$
(ii) $5\frac{7}{8}$
(iii) $4\frac{5}{12}$
(iv) $2\frac{5}{8}$
(v) $3\frac{1}{2}$
(vi) $5\frac{8}{9}$
- (b) (i) $5\frac{2}{3}$
(ii) $4\frac{5}{6}$
(iii) $5\frac{6}{7}$
(iv) $8\frac{5}{8}$
(v) $9\frac{7}{9}$
(vi) $14\frac{3}{5}$
- (c) (i) 0.09, $\frac{3}{5}$, 75%, 0.8
(ii) 0.39, 40%, $\frac{429}{1000}$, 0.6
(iii) $\frac{47}{1000}$, 0.459, 46%, $\frac{7}{10}$
- (d) (i) €44
(ii) €72
(iii) 1.4
(iv) 60
- (e) (i) €45
(ii) €63
(iii) 64
(iv) 10

3.
(a) €80
(b) 2hrs
(c) 27
(d) 32.5km

PAGE 135

- (a) 20g, kitchen scales
(b) 600g, kitchen scales
(c) 2kg, spring balance
(d) 15g, kitchen scales
(e) 500kg, livestock scales

- (f) 270g, kitchen scales
(g) 100g, kitchen scales
(h) 3,750kg, weigh bridge
(i) 25g, kitchen scales
(j) 350g, kitchen scales

Maths Fact: 55.2kg

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1.
(a) $\frac{9}{1000} = 0.009\text{kg}$
(b) $\frac{14}{1000} = 0.014\text{kg}$
(c) $\frac{3}{1000} = 0.003\text{kg}$
(d) $\frac{416}{1000} = 0.416\text{kg}$
(e) $\frac{228}{1000} = 0.228\text{kg}$
(f) $\frac{67}{1000} = 0.067\text{kg}$
(g) $\frac{923}{1000} = 0.923\text{kg}$
(h) $\frac{503}{1000} = 0.503\text{kg}$
(i) $\frac{156}{1000} = 0.156\text{kg}$
(j) $\frac{830}{1000} = 0.830\text{kg}$
(k) $\frac{449}{1000} = 0.449\text{kg}$
2.
(a) $\frac{533}{1000} = 533\text{g}$
(b) $\frac{6}{1000} = 6\text{g}$
(c) $\frac{72}{1000} = 72\text{g}$
(d) $\frac{272}{1000} = 272\text{g}$
(e) $\frac{650}{1000} = 650\text{g}$
(f) $\frac{165}{1000} = 165\text{g}$
(g) $\frac{810}{1000} = 810\text{g}$
(h) $\frac{10}{1000} = 10\text{g}$
(i) $\frac{384}{1000} = 384\text{g}$
(j) $\frac{700}{1000} = 700\text{g}$
(k) $\frac{990}{1000} = 990\text{g}$

3.
(a) 2,736g
(b) 6,259g
(c) 4,372g
(d) 3,257g
(e) 8,057g
(f) 5,418g
(g) 6,450g
(h) 3,300g
(i) 3,709g
(j) 8,731g
(k) 5,008g

4.
(a) 1.737kg
(b) 1.459kg
(c) 6.281kg

- (d) 2.046kg
- (e) 0.990kg
- (f) 3.553kg
- (g) 8.300kg
- (h) 6.430kg
- (i) 7.084kg
- (j) 5.308kg
- (k) 9.004kg

Maths Fact: 170kg

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- 1.**
- (a) 30.323kg
 - (b) 32.266kg
 - (c) 30.001kg
 - (d) 32.323kg
 - (e) 29.010kg
- 2.**
- (a) 5.909kg
 - (b) 17.880kg
 - (c) 2.088kg
 - (d) 8.989kg
 - (e) 2.776kg
 - (f) 1.796kg
 - (g) 5.598kg
 - (h) 2.868kg
- 3.**
- (a) 140.376kg
 - (b) 65.618kg
 - (c) 238.842kg
 - (d) 93.774kg
 - (e) 267.463kg
 - (f) 196.504kg
- 4.**
- (a) 7.114kg
 - (b) 3.588kg
 - (c) 8.037kg
 - (d) 2.687kg
 - (e) 4.506kg
- 5.**
- (a) 49.812kg
 - (b) 151.808kg
 - (c) 3.041kg
 - (d) 2.378kg
 - (e) 80,091kg
 - (f) 1.933kg

Maths Fact: 0.394kg

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- 1. 200g
- 2. 175g
- 3. 1.169kg
- 4. 3.818kg
- 5. 0.765kg
- 6. €4.31
- 7. 36.749kg
- 8. 66.115kg
- 9. 36.756kg
- 10. 752.982kg
- 11. 13.487kg

Maths Fact: 15kg

PAGE 139

- 1.**
- (a) €2.58
 - (b) €3.70
 - (c) €16.70
 - (d) €6.48
 - (e) €9.12
 - (f) €3.40
 - (g) €1.08
 - (h) €7.70
 - (i) €2.96
 - (j) €2.00
- 2.** 202kg

Maths Fact: 2,724kg

PAGE 140

- 1. 57%
- 2. 0.47
- 3. $7^{83/1000}$
- 4. 8.19
- 5. 180
- 6. 48mins
- 7. 1.60m
- 8. 220
- 9. €25
- 10. 54kg
- 11. 24°C
- 12. 39°C
- 13. €12
- 14. €0.45
- 15. 20%
- 16. 2.173kg
- 17. 0.84kg
- 18. €6
- 19. 74
- 20. 30%

PAGE 141

- 1.**
- (a) 12
 - (b) 15
 - (c) 32
 - (d) 18
 - (e) 33
 - (f) 48
 - (g) 35
 - (h) 54
- 2.**
- (a) (i) (1, 4), (2, 2)
(ii) 1, 2, 4
 - (b) (i) (1, 9), (3, 3)
(ii) 1, 3, 9
 - (c) (i) (1, 15), (3, 5)
(ii) 1, 3, 5, 15
 - (d) (i) (1, 17)
(ii) 1, 17
 - (e) (i) (1, 18), (2, 9), (3, 6)
(ii) 1, 2, 3, 6, 9, 18
 - (f) (i) (1, 24), (2, 12), (3, 8),
(4, 6)
(ii) 1, 2, 3, 4, 6, 8, 12, 24
 - (g) (i) (1, 27), (3, 9)
(ii) 1, 3, 9, 27
- 3.**
- (a) true
 - (b) false
 - (c) false
 - (d) true
 - (e) false
 - (f) true
 - (g) true
 - (h) false
 - (i) true
 - (j) false
 - (k) true
 - (l) true

PAGE 142

- 1.**
- (a) 3, 6, 9, 12, 15
 - (b) 6, 12, 18, 24, 30
 - (c) 8, 16, 24, 32, 40
 - (d) 7, 14, 21, 28, 35
 - (e) 4, 8, 12, 16, 20
 - (f) 9, 18, 27, 36, 45
 - (g) 10, 20, 30, 40, 50
 - (h) 12, 24, 36, 48, 60
 - (i) 15, 30, 45, 60, 75

- 2.**
- (a) 3, 12, 21, 27, 30
 - (b) 5, 20, 35, 45, 50
 - (c) 9, 36, 63, 81, 90
 - (d) 11, 44, 77, 99, 110
 - (e) 12, 48, 84, 108, 120
 - (f) 15, 60, 105, 135, 150
 - (g) 20, 80, 140, 180, 200
 - (h) 25, 100, 175, 225, 250
 - (i) 50, 200, 350, 450, 500
- 3.**
- (a) 7, 21, 35, 56, 70, 84
 - (b) 16, 24, 32, 40, 64, 88
 - (c) 12, 30, 36, 48, 54, 66
 - (d) 18, 27, 36, 63, 81, 90
- 4.**
- (a) ✓
 - (b) ✗
 - (c) ✗
 - (d) ✓
 - (e) ✗
 - (f) ✗
 - (g) ✓
 - (h) ✗
 - (i) ✓
 - (j) ✗
 - (k) ✓
 - (l) ✗
 - (m) ✗
 - (n) ✓
 - (o) ✗
 - (p) ✓

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- 2.**
- (b) 1, 2
 - (c) 1, 3, 9
 - (d) 1, 2, 3, 5, 6, 9, 10
 - (e) 1, 2, 3, 6
 - (f) 1, 2, 4, 8

PAGE 144

- 1.**
- (a) composite
 - (b) prime
 - (c) prime
 - (d) composite
 - (e) composite
 - (f) prime

- (g) composite
- (h) prime
- (i) composite
- (j) composite
- (k) prime
- (l) composite
- (m) composite
- (n) composite
- (o) composite

2.
Prime: 19, 37, 89, 2, 67, 97, 79, 11
Comp: 28, 55, 90, 15, 144, 121

- 3.
- (a) 23
- (b) 37
- (c) 53
- (d) 79

- 4.
- (a) 25
- (b) 131
- (c) 6
- (d) 74
- (e) 83, 89
- (f) one
- (g) 95
- (h) 4

Challenge: (a) 19 and 41
(b) 5, 29 and 41

PAGE 145

- 1.
- (a) 1, 3, 5, 7, 9
- (b) 2, 4, 6, 8, 0

- 2.
- (a) 23
- (b) 43, 45, 47, 49, 51
- (c) 77, 79, 81, 83, 85, 87, 89
- (d) 163, 165, 167, 169, 171, 173
- (e) 1,231, 1,233, 1,235, 1,237, 1,239, 1,241, 1,243, 1,245, 1,247, 1,249

- 3.
- (a) 28, 30, 32, 34, 36, 38
- (b) 56, 58, 60, 62, 64, 66
- (c) 82, 84, 86, 88, 90, 92, 94

- (d) 124, 126, 128, 130, 132, 134, 136
- (e) 1,118, 1,120, 1,122, 1,124, 1,126, 1,128, 1,130

- 4.
- (a) even
- (b) even
- (c) odd
- (e) odd
- (f) odd
- (f) even

- 5.
- (i) $8 = 3 + 5;$
 $10 = 7 + 3;$
 $12 = 5 + 7;$
 $14 = 7 + 7;$
 $16 = 5 + 11$
- (ii) $28 = 5 + 23;$
 $32 = 3 + 29;$
 $36 = 5 + 31;$
 $40 = 3 + 37;$
 $44 = 3 + 41$
- (iii) $48 = 37 + 11;$
 $52 = 11 + 41;$
 $66 = 5 + 61;$
 $74 = 3 + 71;$
 $82 = 3 + 79$

- 6.
- (a) $11 - 7 = 4$
- (b) $19 - 13 = 6$
- (c) $19 - 7 = 12$
- (d) $13 - 3 = 10$
- (e) $11 - 3 = 8$
- (f) $19 - 5 = 14$

- 7.
- (a) $31 - 11 = 20$
- (b) $23 - 5 = 18$
- (c) $53 - 37 = 16$

Challenge: 139 and 101

PAGE 146

- 2.
- (a) $(6 \times 3) (9 \times 2)$
- (b) $(3 \times 8) (6 \times 4)$
- (c) $(6 \times 6) (4 \times 9) (12 \times 3)$
- (d) $(6 \times 8) (4 \times 12) (3 \times 16) (2 \times 24)$
- (e) $(3 \times 4) (6 \times 2)$
- (f) $(8 \times 9) (12 \times 6) (3 \times 24) (2 \times 36) (4 \times 18)$
- (g) $(10 \times 10) (5 \times 20) (4 \times 25) (2 \times 50)$

- 3.
- (a) 10, 14, 21, 35
- (b) 15, 18, 38, 63
- (c) 33, 35, 39, 46, 54
- (d) 45, 49, 51, 77, 93

- 4.
- (a) 11, 17, 37, 43
- (b) 43, 61, 67
- (c) 61, 67, 71, 79, 83
- (d) 79, 89, 97, 101

5. 21 28 36

- 6.
- $1 + 2 + 3 + 4 = 10;$
 $1 + 2 + 3 + 4 + 5 = 15;$
 $1 + 2 + 3 + 4 + 5 + 6 = 21;$
 $1 + 2 + 3 + 4 + 5 + 6 + 7 = 28;$
 $1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 = 36;$
 $1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 9 = 45;$
 $1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 9 + 10 = 55$

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- 2.
- (a) 144
- (b) 256
- (c) 484

- 4.
- (a) 16 or (4×4)
- (b) 25 or (5×5)
- (c) 36 or (6×6)
- (d) 49 or (7×7)

PAGE 148

- 1.
- (a) radius
- (b) sector
- (c) circumference
- (d) arc
- (e) centre
- (f) diameter
- (g) quadrant

- 2.
- (a) X
- (b) ✓
- (c) ✓
- (d) ✓

- (e) X
- (f) ✓
- (g) X
- (h) X

- 3.
- (a) 120°
- (b) 90°
- (c) 170°
- (d) 30°

PAGE 149

- 1.
- (a) (i) 12cm
(ii) 58cm
(iii) 76cm
- (b) (i) 4.5cm
(ii) 29cm
(iii) 38cm
- (c) 44cm
- (d) 6.5cm
- (e) 177cm or 1.77m

Puzzle: 11

PAGE 150

- 1.
- (a) (i) 2cm
(ii) 4cm
(iii) 12cm^2
- (b) (i) 3.5cm
(ii) 7cm
(iii) 32cm^2
- (c) (i) 1cm
(ii) 2cm
(iii) 4cm^2
- (d) (i) 3cm
(ii) 6cm
(iii) 24cm^2

- 3.
- (a) 4.5cm
- (b) 6cm
- (c) 6cm

- (d) (i) 4cm^2
(ii) 32cm^2
(iii) 60cm^2

- 4.**
(a) 1cm
(b) 4cm²
(c) 8cm
(d) 24cm²
(e) 80cm²

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- 1.**
(a) 54m²

(b) (i) 16m²
(ii) 4m²
(iii) 34m²

(c) €1,615
(d) €385

- 2.**
(a) (i) 32cm
(ii) 26cm
(iii) 20cm

(b) 1.60m
(c) €62.50
(d) 40cm

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- 1.**
(a) 15
(b) $\frac{1}{2}$
(c) No, can't have half of a child.

2.
(a) $\frac{1}{2}$
(b) $\frac{1}{4}$
(c) 28
(d) 56

3.
(a) Ailwee Caves
(b) $\frac{1}{4}$
(c) $\frac{1}{8}$
(d) $\frac{1}{4}$
(e) 11

- Challenge:** (a) $\frac{1}{8}$
(b) (i) €94
(ii) €376
(iii) €188
(iv) €94

PAGE 153

- 1.**
(b) (i) working
(ii) chores

(c) (i) $\frac{1}{3}$
(ii) $\frac{1}{4}$
(iii) $\frac{1}{24}$

(d) $\frac{1}{2}$

(e) (i) 8.33%
(ii) 12.5%
(iii) 33.33%

or
(e) (i) 8 $\frac{1}{3}$ %
(ii) 12 $\frac{1}{2}$ %
(iii) 33 $\frac{1}{3}$ %

- 2.**
(a) 2, $\frac{1}{12}$, 30°
(b) 6, $\frac{1}{4}$, 90°
(c) 8, $\frac{1}{3}$, 120°
(d) 3, $\frac{1}{8}$, 45°
(e) 4, $\frac{1}{6}$, 60°
(f) 1, $\frac{1}{24}$, 15°

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- 1.**
(a) 15, $\frac{1}{4}$, 90°
(b) 20, $\frac{1}{3}$, 120°
(c) 10, $\frac{1}{6}$, 60°
(d) 15, $\frac{1}{4}$, 90°

3.
(a) 5, $\frac{1}{4}$, 90°
(b) 2, $\frac{1}{10}$, 36°
(c) 6, $\frac{3}{10}$, 108°
(d) 5, $\frac{1}{4}$, 90°
(e) 2, $\frac{1}{10}$, 36°

- Challenge:** (a) (i) 15, $\frac{1}{8}$, 45°
(ii) 10, $\frac{1}{12}$, 30°
(iii) 20, $\frac{1}{6}$, 60°
(iv) 15, $\frac{1}{8}$, 45°
(v) 20, $\frac{1}{6}$, 60°
(vi) 40, $\frac{1}{3}$, 120°
(c) €13.05

PAGE 155

- 1.**
(a) fiction
(b) fiction, fantasy, sci-fi

- 2.**
(a) non-fiction, poetry
(b) poetry

- 3.**
Year 1:
(i) 180°, $\frac{1}{2}$, 90
(ii) 60°, $\frac{1}{6}$, 30
(iii) 60°, $\frac{1}{6}$, 30
(iv) 30°, $\frac{1}{12}$, 15
(v) 30°, $\frac{1}{12}$, 15

- Year 2:**
(i) 90°, $\frac{1}{4}$, 45
(ii) 90°, $\frac{1}{4}$, 45
(iii) 90°, $\frac{1}{4}$, 45
(iv) 60°, $\frac{1}{6}$, 30
(v) 30°, $\frac{1}{12}$, 15

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- 1.**
(a) closed
(b) closed
(c) open
(d) open
(e) open
(f) open
(g) closed
(h) closed
(i) closed
(j) open
(k) closed
(l) closed

- 2.**
(a) ✓
(b) ✗
(c) ✓
(d) ✗
(e) ✓
(f) ✗
(g) ✗
(h) ✗
(i) ✗
(j) ✓
(k) ✗
(l) ✓

- 3.**
(a) =
(b) >
(c) >
(d) >
(e) =

- (f)** <
(g) =
(h) <
(i) >
(j) =
(k) >
(l) >
(m) >
(n) <
(o) >

4.
(a) <
(b) =
(c) <
(d) >
(e) <
(f) =
(g) >
(h) =
(i) >
(j) >
(k) =
(l) =
(m) >
(n) >
(o) <

PAGE 157

- 1.**
(a) +
(b) +
(c) x
(d) -
(e) ÷
(f) ÷
(g) x
(h) ÷
(i) x
(j) x
(k) +
(l) -

2.
(a) 7
(b) 24
(c) 9
(d) 8
(e) 16
(f) 49
(g) 56
(h) 64

- (i) 33
- (j) 172
- (k) 32
- (l) 16
- (m) 33
- (n) 86
- (o) 45
- (p) 10

4.

- (a) 4
- (b) 3
- (c) 3
- (d) 12
- (e) 10
- (f) 5
- (g) 3
- (h) 10
- (i) 15
- (j) 4
- (k) 7
- (l) 17

PAGE 158

1.

- (a) $7 + 6 = 13$
- (b) $120\text{m} \div 3 = 40\text{m}$
- (c) $8 \times 5 = 40$
- (d) $17 + 29 = 46$
- (e) $48 - 36 = 12$
- (f) $\text{€}115 \div 5 = \text{€}23$

2.

- (a) $\text{€}36 \div 3 = \text{€}12$
- (b) $12 \times 4 = 48$
- (c) $\text{€}18 \div 3 = \text{€}6$
- (d) $24 + 14 = 38$
- (e) $18 - 5 = 13$
- (f) $21 - 14 = 7$

PAGE 159

1.

- (a) (i) 32
(ii) 24
(iii) 23
- (b) (i) 48
(ii) 60
(iii) 16
- (c) (i) 68
(ii) 40
(iii) 48

- (d) (i) 48
(ii) 288
(iii) 9

- (e) (i) 90
(ii) 210
(iii) 126

- (f) (i) 36
(ii) 448
(iii) 72

- (g) (i) 54
(ii) 129
(iii) 776

- (h) (i) 300
(ii) 62.4
(iii) 132.3

- (i) (i) 6
(ii) 96
(iii) 352

2.

- (a) 48
- (b) 63
- (c) 112
- (d) 144
- (e) 500
- (f) 192
- (g) 360
- (h) 620
- (i) 1280
- (j) 520
- (k) 820
- (l) 410
- (m) 840
- (n) 770
- (o) 520
- (p) 1,800
- (q) 2,300
- (r) 2,100

3.

- (a) $\text{€}99$; $110 - 11 = 99$
- (b) $\text{€}58.80$; $73.5 - 14.7 = 58.8$
- (c) $\text{€}33$; $44 - 11 = 33$
- (d) $\text{€}166$; $249 - 83 = 166$
- (e) $\text{€}8.72$; $34.88 - 26.16 = 8.72$
- (f) $\text{€}30.20$; $36.24 - 6.04 = 30.2$
- (g) $\text{€}240.80$; $275.2 - 34.4 = 240.8$

- (h) $\text{€}576.42$; $960.7 - 384.28 = 576.42$

PAGE 160

- 1. 56
- 2. 5
- 3. 54
- 4. Composite
- 5. 81
- 6. 36cm
- 7. 15
- 8. 60°
- 9. 144
- 10. 5
- 11. 11
- 12. $\text{€}44$
- 13. $\text{€}7.00$
- 14. $\text{€}170$
- 15. 38
- 16. 83; 89
- 17. Joe
- 18. 64
- 19. $\text{€}36$
- 20. 38cm

PAGE 161

- 1.
- (a) flat
- (b) solid
- (c) lines
- (d) cannot
- (e) drawings
- (f) don't have
- (g) 2-D
- (h) cannot
- (i) can
- 2.
- (i) (a) circle
(b) cuboid
(c) pyramid
(d) cylinder
(e) rhombus
(f) trapezium
(g) pyramid
(h) cube
(i) semi-circle
(j) sphere
(k) cone
(l) prism
(m) pentagon
(n) triangle

- (ii) circle, rhombus, trapezium, semi-circle, pentagon, triangle

- (iii) cuboid, pyramid, cylinder, tetrahedron, cube, sphere, cone, triangular prism

- (iv) cuboid, cylinder, cube, triangular prism

- (v) cone, sphere, cylinder

- (vi) circle, semi-circle

- (vii) pyramid

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1.

- (a) cube, 6, 12, 8, squares
- (b) cuboid, 6, 12, 8, rectangles, squares
- (c) cylinder, 3, 2, 0, circles, rectangles
- (d) sphere, 1, 0, 0
- (e) prism, 5, 9, 6, triangles, rectangles
- (f) pyramid, 5, 8, 5, triangles, rectangle
- (g) pyramid, 4, 6, 4, triangles
- (h) prism, 7, 15, 10, rectangles, pentagons
- (i) cone, 2, 1, 1

2.

- (a) (i) cylinder
(ii) any shape
(iii) triangular prism
(iv) cuboid
(v) cylinder
(vi) cylinder
(vii) cuboid
(viii) cuboid

PAGE 163

1.

- (a) (i) triangular
(ii) pentagonal
(iii) rectangular
(iv) hexagonal

2.

- (a) triangle
- (b) (i) 4
(ii) 6
(iii) 4

(c) 3

3.

- (a) triangular
- (b) hexagonal
- (c) square
- (d) octagonal

4.

- (a) irregular
- (b) regular
- (c) regular
- (d) irregular

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1.

- (a) (i) tetrahedron
- (ii) cuboid
- (iii) hexagonal prism
- (iv) pentagonal pyramid
- (v) cube
- (vi) square pyramid
- (vii) triangular prism

- (b) (i) sphere
- (ii) cone
- (iii) cylinder

2.

- (a) no
- (b) (i) 2
- (ii) 1
- (iii) 0

- (c) half an orange/coconut/
globe, etc; igloo; bowl.

3. (d) and (e)

4.

- (a) pyramids
- (b) 8
- (c) triangle
- (d) yes

Challenge 1: Dodecahedrons,
icosahedrons

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1.

- (a) cone, cylinder, cuboid,
pyramid, cube
- (b) pyramid, cylinder,
cube, cuboid, cone,
sphere, triangular prism,
hemisphere

2.

- (i) to (e);
- (ii) to (c);
- (iii) to (b);
- (iv) to (d);
- (v) to (f);
- (vi) to (a).

3. (b) and (c)

PAGE 166

1.

- (a) (i) 18
- (ii) 18
- (iii) 18

- (b) (i) 11
- (ii) 11
- (iii) 17

- (c) (i) 64
- (ii) 64
- (iii) 64

- (d) (i) 10
- (ii) 10
- (iii) 40

- (e) (i) does not
- (ii) does

2.

- (a) 55
- (b) 72
- (c) 20
- (d) 85
- (e) 0
- (f) 54

3.

- (a) 44
- (b) 28
- (c) 32
- (d) 84
- (e) 22
- (f) 16.4
- (g) 9
- (h) 50
- (i) 9.1
- (j) 150.4
- (k) 61.28
- (l) 7.13
- (m) 8.64
- (n) 36.47
- (o) 34.18

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1.

- (a) 26.7
- (b) 12.6
- (c) 36
- (d) 35
- (e) 24.4
- (f) 32
- (g) 67
- (h) 4
- (i) 10

2.

- (a) $x + x = €85$
- (b) $x = €105$
- (c) $x + x = €120$
- (d) $x + x - = €100$

3.

- (a) $x + x = €13.65$
- (b) $+ + = €16.80$
- (c) $+ x - = €7.35$

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2.

- (a) 41, 51, 62
- (b) 26, 37, 50
- (c) 31, 43, 57
- (d) 420, 400, 380
- (e) 40, 47, 55
- (f) 32, 64, 128
- (g) 61, 85, 113
- (h) 1,024, 4,096, 16,384
- (i) 36.8, 73.6, 147.2

3.

- (a) 24, 45
- (b) 57, 81, 93
- (c) 59, 47, 43
- (d) 32, 8
- (e) 6.5, 8, 11
- (f) 20.4, 18.2, 13.8
- (g) 67, 58
- (h) $8\frac{1}{2}$, $8\frac{1}{4}$, 8

4. $60 - 6$

5.

- (a) 25, $0 + 25$
- (b) 225, $200 + 25$
- (c) 625, $600 + 25$
- (d) 1,225, $1,200 + 25$

(e) 2,025, $2,000 + 25$

(f) 3,025, $3,000 + 25$

6.

- (a) 11
- (b) 111
- (c) 1,111
- (d) 11,111
- (e) 111,111
- (f) 1,111,111

PAGE 169

1.

- (a) Ana
- (b) E
- (c) 2021
- (d) Dolly
- (e) 2023
- (f) 2025

2.

2028: Alex
Bonnie
Colin
Danielle

2030: Alberto
Beryl
Chris
Debby

2050: Arthur
Bertha
Cristobal
Dolly

2063: Ana
Bill
Claudette
Danny

2074: Arthur
Bertha
Cristobal
Dolly

3.

- (a) 1, 5, 10, 10, 5, 1
- (b) 1, 2, 3, 4, 5, 6...
- (c) 1, 3, 6, 10, 15, 21...

(d) Row 1 = 1;
Row 2 = 2;
Row 3 = 4;
Row 4 = 8;
Row 5 = 16;
Row 6 = 32

(e) 63

Challenge: (a) Row 7: 1, 6, 15,
20, 15, 6, 1
Row 8: 1, 7, 21,
35, 35, 21, 7, 1

(c) Row 7: 64
Row 8: 128

PAGE 170

1.

- (a) 15ml
- (b) 2l
- (c) 10l
- (d) 2 ½ l
- (e) 1l
- (f) 70l
- (g) 500l

2.

- (a) 1,250ml
- (b) 1l 250ml

3.

- (a) 4l

Maths Fact: 20

Challenge: (a) 4
(b) €10.02
(c) €9.13

PAGE 171

1.

- (a) $5/1000 = 0.005$
- (b) $18/1000 = 0.018$
- (c) $2/1000 = 0.002$
- (d) $75/1000 = 0.075$
- (e) $146/1000 = 0.146$
- (f) $420/1000 = 0.420$
- (g) $902/1000 = 0.902$
- (h) $700/1000 = 0.700$

2.

- (a) $3/1000 = 3\text{ml}$
- (b) $51/1000 = 51\text{ml}$
- (c) $4/1000 = 4\text{ml}$
- (d) $267/1000 = 267\text{ml}$
- (e) $3/100 = 30\text{ml}$
- (f) $68/100 = 680\text{ml}$
- (g) $104/1000 = 104\text{ml}$
- (h) $92/100 = 920\text{ml}$

3.

- (a) 4,159ml
- (b) 5,750ml
- (c) 6,258ml
- (d) 25,703ml
- (e) 16,030ml
- (f) 7,372ml
- (g) 9,290ml
- (h) 2,200ml

4.

- (a) 3.561l
- (b) 4.247l
- (c) 8.42l
- (d) 2.049l
- (e) 6.07l
- (f) 0.319l
- (g) 0.053l
- (h) 2.264l

Maths Fact: 52

PAGE 172

1.

- (a) 700ml
- (b) 60ml
- (c) 90ml
- (d) 750ml
- (e) 75ml

3.

- (a) 85ml
- (b) 800ml
- (c) 80ml
- (d) 900ml

Maths Fact: (a) 500ml
(b) 0.5l

PAGE 173

1.

- (a) 8.832l
- (b) 8.355l
- (c) 32.332l
- (d) 24.551l
- (e) 44.033l

2.

- (a) 1.860l
- (b) 2.965l
- (c) 2.692l
- (d) 3.815l
- (e) 2.458l

3.

- (a) 4.858l
- (b) 6.233l
- (c) 2.776l
- (d) 4.655l
- (e) 23.422l

4. 789.41l

5. 4.731l

6.

- (a) 41.764l
- (b) 102.464l

Maths Fact: 4

PAGE 174

1.

- (a) 21.735l
- (b) 28.980l
- (c) 38.640l
- (d) 65.205l
- (e) 91.770l
- (f) 101.43l
- (g) 140.070l
- (h) 166.635l

2.

- (a) 0.912l
- (b) 0.608l
- (c) 0.456l
- (d) 0.304l
- (e) 0.152l

3.

- (a) €2.90
- (b) €3.24
- (c) €3.55
- (d) €2.85
- (e) €3.21

5. 1.5l

6.

- (a) $73/100\text{l}$
- (b) 1,400ml
- (c) 7.29l
- (d) 0.054l
- (e) $9^2/10\text{l}$
- (f) $8^3/4\text{l}$

Maths Fact: 40l

PAGE 175

1.

- (a) 1.888l
- (b) 9l 841ml
- (c) 0.797l
- (d) 1l 635ml
- (e) 20.101l

2.

- (a) 5.4l
- (b) 8.775l
- (c) 31.725l
- (d) 42.525l

3.

- (a) 1.59l
- (b) 1.06l
- (c) 0.636l
- (d) 0.265l

5.

- (a) 1,720ml
- (b) 1,400ml
- (c) 7 ½ l
- (d) $9^2/10\text{l}$

6. 20ml

7. 0.125ml

8. 11,756l

9. €431.60

10.

- (a) 84.12l
- (b) 129.49l

Maths Fact: 2,379l

PAGE 176

1. 7,306l

2. 1.35l

3.

- (a) 2.6l
- (b) 2,600ml

4.

- (a) 9.1kg
- (b) 7.28kg
- (c) 29.12kg

5.

(a) shower: 28l

(b) bath: 80l

(c) power shower: 100l

6.
 (a) 320l
 (b) 240l
 (c) 1,050l
 (d) 172,800l
 (e) 28,000l
 (f) 359,800l
 (g) 570l
 (h) 960l
 (i) 640l
 (j) 1,220l
 (k) 49,000l

7.
 (a) (i) 2
 (ii) 5
 (iii) 10

- (b) (i) 3
 (ii) 5

- (c) 200
 (d) 5

Maths Fact: 432l

PAGE 177

1. Certain
2. Impossible
3. Unlikely
4. Likely
5. Even chance
6. Even chance
7. Likely
8. Possible
9. Even chance
10. Likely
11. Possible
12. Impossible
13. Possible
14. Certain
15. Possible

Maths Fact: (i) $\frac{1}{4}$
 (ii) 0.25

PAGE 178

1.
 (a) possible
 (b) impossible
 (c) even chance
 (d) possible
 (e) certain
 (f) possible

- (g) likely
 (h) impossible
 (i) likely
 (j) impossible

2.
 (a) 5
 (b) 3
 (c) 4
 (d) 7
 (e) 6
 (f) 25

3.
 (b) 5 out of 25 or $\frac{1}{5}$
 (c) 7 out of 25 or $\frac{7}{25}$
 (d) 6 out of 25 or $\frac{6}{25}$
 (e) 3 out of 25 or $\frac{3}{25}$
 (f) no chance
 (g) 10 out of 25 or $\frac{2}{5}$
 (h) 9 out of 25 or $\frac{9}{25}$
 (i) 10 out of 25 or $\frac{2}{5}$
 (j) 12 out of 25 or $\frac{12}{25}$
 (k) 16 out of 25 or $\frac{16}{25}$

Maths Fact: 8

PAGE 179

Maths Fact 1: 110
Maths Fact 2: 45,000

PAGE 180

1.
 (a) 2:5 or $\frac{2}{5}$
 (b) 4:5 or $\frac{4}{5}$
 (c) 3:5 or $\frac{3}{5}$
 (d) 1:5 or $\frac{1}{5}$
 (e) no
 (f) 3:5 or $\frac{3}{5}$
 (g) Yes

2.
 (a) 1:7 or $\frac{1}{7}$
 (b) 1:7 or $\frac{1}{7}$
 (c) 2:7 or $\frac{2}{7}$
 (d) 3:7 or $\frac{3}{7}$
 (e) 5:7 or $\frac{5}{7}$
 (f) no
 (g) 6:7 or $\frac{6}{7}$

3.
 (a) 3:10 or $\frac{3}{10}$
 (b) 5:10 or $\frac{1}{2}$
 (c) 5:10 or $\frac{1}{2}$
 (d) 7:10 or $\frac{7}{10}$
 (e) yes
 (f) $\frac{5}{10}$ or $\frac{1}{2}$

4.
 (a) 1:10 or 10%
 (b) 1:2 or 50%
 (c) 1:2 or 50%
 (d) 1:5 or 20%
 (e) 1:2 or 50%

Maths Fact: (a) 4
 (b) 20

PAGE 181

1.
 (a) 3:6 or 50%
 (b) 3:6 or 50%
 (c) zero
 (d) $\frac{3}{6}$ or 50%
 (e) $\frac{2}{6}$ or 33%
 (f) $\frac{3}{6}$ or 50%

3.
 (a) 1 in 12 or $\frac{1}{12}$
 (b) 3 in 12 or $\frac{3}{12}$ or 25%
 (c) 2 in 12 or $\frac{3}{12}$ or $\frac{1}{6}$
 (d) 2 in 12 or $\frac{2}{12}$ or $\frac{1}{6}$
 (e) 2 in 12 or $\frac{1}{6}$
 (f) 1 in 12 or $\frac{1}{12}$
 (g) 4 in 12 or $\frac{4}{12}$ or $\frac{1}{3}$
 (h) 2 in 12 or $\frac{2}{12} = \frac{1}{6}$
 (i) 4 in 12 or $\frac{4}{12} = \frac{1}{3}$
 (j) 5 in 12 or $\frac{5}{12}$

Maths Fact: 50

PAGE 182

1.
 (a) 1:10 or 10%
 (b) 1:5 or 20%
 (c) 3:20 or 15%

2.
 (b) (i) 15
 (ii) 25
 (iii) 40

3.
 (c) 25
 (d) 23
 (e) 8
 (f) 8

Maths Fact: 34

PAGE 183

1. cuboid
2. 12
3. 8
4. 8
5. add
6. division
7. 29
8. 33
9. 16.5
10. 28
11. 120
12. 11.7
13. 7.7
14. 10ml
15. 8.45l
16. 2 out of 5 or 40%
17. blue
18. 400ml
19. 3.2
20. $2\frac{1}{4}$

PAGE 184

1.
 (a) €10.10
 (b) €17.40
 (c) €25.70
2.
 (a) 185 (in 2016)
 (b) 1869
 (c) 1987
 (d) 2

PAGE 185

4.
 (a) €38.50
 (b) $(1 \times €9.00) + (2 \times €12) + (5 \times €8.50) = €75.50$
 (c) $(3 \times €6.50) + (4 \times €12) = €67.50$

(d) $(6 \times €8.50) + (7 \times €9) +$
 $(2 \times €6.50) = €127.00$

5.

(a) 510

(b) 18:00

(c) 266

6.

(a) €23.10

(b) €27.30

(c) €24.50

(d) €33.40

(e) €23.10

7. €79.50

Challenge 1: 992kg

Challenge 2: Pam $(8 \times €12) -$
 $(5 \times €9) = €51$

PAGE 186

1. 4,700

2. 16

3. 6

4. $\frac{9}{12}$

5. $\frac{7}{6}$ or $1 \frac{1}{6}$

6. 9

7. 8kg

8. 58,370

9. €19.20

10. €350

11. 56,976

12. 0.063

13. Acute

14. €0.10

15. 9

16. €126

17. 13:29

18. 17:00

19. 69.93

20. €48.95

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