

Pupil's Book Answers

1. Look Back

Page 1

Summer Sun

1. €690
2. €374
3. €158

Page 2

4. €1064
5. €877
6. 11.15am
7. 12.55pm
8. 3.10pm
9. 3.45pm
10. 162
11. 143
12. 486
13. €315
14. €273
15. 1104km
16. 133km
17. 324km
18. 469km
19. €20
20. €10
21. €5
22. €5
23. 6
24. 5

Page 3

1. a) 2656 b) 5704 c) 6168
d) 4747 e) 77 f) 573
g) 5336 h) 3433 i) 1666
j) 2514 k) 1125 l) 5144
m) 1075 n) 1062 o) 3726
p) 8364 q) 27 r) 71
s) 228 t) 596 u) 497
2. a) 99, 101, 103
b) 700, 705, 710
c) 1000, 998, 996
d) 2012, 2112, 2212
3. a) 21 b) 30 c) 14
d) 27 e) 18 f) 45
g) 25 h) 81
4. a) 80 b) 81 c) 90
d) 20 e) 81 f) 48
5. a) 73 mins b) 107 mins
c) 118 mins d) 146 mins
e) 214mins f) 300 mins
6. a) 1 hr 33 mins
b) 1 hr 56 mins
c) 2hrs 5 mins

- d) 2 hrs 29 mins
- e) 3 hrs 18 mins
- f) 4 hrs 35 mins

2. Place Value

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Roman Numerals

1. a) VII b) XV c) IX
d) XI e) XXIII f) XXXV
g) XXVII h) IL i) LII
j) XCVIII k) CXXXVI
l) CLXVII m) CMXIII
n) MCCL o) MMMMCMXCIX

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2. a) CDIX b) MCDXLI
c) DCCCLXXX d) CLXXXV
e) Teacher check

Place Value

3. a) 3081 b) 5307 c) 4513
d) 3000, 300, 3
4. Teacher check

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Think About: 21

5. Teacher check
6. a) 5 b) 20 c) 900
d) 1 e) 60 f) 8000
g) 700 h) 0 i) 0
j) 50 k) 300 l) 200
m) 50 n) 0 o) 1
p) 0 q) 9000 r) 40
s) 600 t) 2000

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7. a) 8520 b) 258 c) 2850
d) 8052 e) 5820 f) 258
g) 8205 h) 8520/8502
i) Teacher check
8. 847, 874, 784, 748, 478, 487
9. a) 86410, 1468
b) 83210, 1238
c) 96431, 13469
d) 75320, 2357
e) 88631, 13688
f) 54311, 11345
g) 98655, 55689
h) 95331, 13359
i) 77640, 4677
10. Teacher check

11. a) 337 b) 4629
c) 5092 d) 10871
e) 6304 f) 15200
g) 68145 h) 100356
i) 150904 j) 219712

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12. Teacher check
13. b) $6000 + 200 + 80$
c) $9000 + 800 + 5$
d) $10000 + 1000 + 200 + 30 + 6$
e) $20000 + 5000 + 600 + 70 + 9$
f) $70000 + 4000 + 30 + 5$
g) $100,000 + 30000 + 8000 + 600 + 90 + 3$
h) $600,000 + 50000 + 400 + 30 + 1$

14. a) 25305 b) 21800 c) 17030
d) 12999 e) 10410 f) 8550

15. a) $569 < 589$
b) $725 > 527$
c) $302 < 303$
d) $745 > 475$
e) $1460 > 1046$
f) $2798 < 2978$
g) $4520 < 5420$
h) $7504 > 7405$
i) $30456 < 30564$
j) $17290 > 16290$

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16. a) 55, 65, 75, 85, 95, 105, 115
b) 107, 117, 127, 137, 147, 157, 167
c) 142, 132, 122, 112, 102, 92, 82
d) 299, 309, 319, 329, 339, 349, 359
e) 548, 538, 528, 518, 508, 498, 488
f) 1800, 1810, 1820, 1830, 1840, 1850, 1860
g) 3210, 3200, 3190, 3180, 3170, 3160, 3150
h) 648, 748, 848, 948, 1048, 1148, 1248
i) 1670, 1570, 1470, 1370, 1270, 1170, 1070



j) 4030, 5030, 6030, 7030,
8030, 9030, 10030
k) 12420, 11420, 10420,
9420, 8420, 7420, 6420

17. a) 660, 720, 750, 810, 840
b) 245, 305, 485, 545, 605
c) 368, 428, 448, 488, 508,
528
d) 680, 630, 580, 430, 380,
330
e) 313, 513, 813, 913, 1013
f) 1495, 1520, 1570, 1595,
1620

18. a) 7, 8, 10, 28, 39, 42
b) 2, 4, 5, 12, 30, 34
c) 4, 5, 27, 29, 35, 42
d) 4, 11, 20, 20, 22, 41
e) 9, 13, 15, 17, 32, 39
f) 1, 7, 12, 14, 25, 32
g) 4, 15, 17, 27, 29, 32
h) 2, 9, 14, 22, 34, 40

19. a) Teacher check b) No

20. a) 5550, 525, 505, 500, 105,
55, 15, 5
b) 2120, 2102, 2000, 210,
202, 200, 22, 12
c) 76430, 6370, 6347, 6340,
4370, 673, 637
d) 55240, 5240, 4520, 2530,
450, 340, 55, 45
e) 98650, 9865, 8566, 6579,
5768, 986, 896
f) 66500, 65600, 50060,
6050, 6005, 5006

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21. a) 21560 b) 19560 c) 30560
d) 65220 e) 65020 f) 55120

22. a) 21898, 19898, 17898,
15898, 13898, 11898
b) 43620, 40120, 36620,
33120, 29620, 26120
c) 38200, 34200, 30200,
26200, 22200, 18200
d) 48150, 42150, 36150,
30150, 24150, 18150
e) 29040, 29240, 29440,
29640, 29840, 30040
f) Teacher check

23. a) 90000 b) 351 c) 19999
d) 9999 e) 12321, 21312

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24. a)

x	10	100	1000
5	50	500	5000
8	80	800	8000
10	100	1000	10000
12	120	1200	12000
16	160	1600	16000
23	230	2300	23000
34	340	3400	34000
51	510	5100	51000
70	700	7000	70000
95	950	9500	95000

b) Teacher check

25. a) 320, 32 b) 450, 45 c) 900, 90 d) 150, 15
e) 200, 20 f) 610, 61 g) 760, 76 h) 1200, 120
i) 590, 59 j) 1800, 180
26. a) 64 b) 120 c) 352 d) 809
e) 144 f) 670 g) 669 h) 1378
i) 9813 j) 2670 k) 5011 l) 7802
m) 8260 n) 13056 o) 25090

27.

÷	4100	6200	7300	9600	8400	10300	17400	19800
÷ 10	410	620	730	960	840	1030	1740	1980
÷ 100	41	62	73	96	84	103	174	198

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28. Teacher check

29. Teacher check

30. a) 20 b) 1 c) $\frac{2}{100}$ d) 300 e) $\frac{9}{10}$ f) 8
g) $\frac{2}{10}$ h) 700 i) 50 j) $\frac{7}{100}$ k) 100 l) $\frac{7}{10}$
m) 0 n) $\frac{5}{100}$ o) 0

31. 1.1, 1.8, 1.25, 1.7, 1.54

32. a) 4.5, 4.9 b) 21.5, 22
c) 45.34, 45.38 d) 7.64, 7.7

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33. a) 4.8 b) 6.3 c) 12.4 d) 36.4 e) 6.36
f) 10.11 g) 17.83 h) 63.54

34. a) 3.4, 3.5, 3.6, 3.7, 3.8, 3.9, 4, 4.1
b) 8.9, 9, 9.1, 9.2, 9.3, 9.4, 9.5, 9.6
c) 14.7, 14.8, 14.9, 15, 15.1, 15.2, 15.3, 15.4
d) 28.4, 28.3, 28.2, 28.1, 28, 27.9, 27.8, 27.7
e) 79.3, 79, 78.7, 78.4, 78.1, 77.8, 77.5, 77.2
f) 166.2, 166, 165.8, 165.6, 165.4, 165.2
g) 478.7, 478.9, 479.1, 479.3, 479.5, 479.7
h) 37.48, 37.49, 37.5, 37.51, 37.52, 37.53
i) 69.33, 69.32, 69.31, 69.3, 69.29, 69.28
j) 130.58, 130.48, 130.38, 130.28, 130.18, 130.08
k) 563.17, 563.2, 563.23, 563.26, 563.29, 563.32



35. a) €1.45, €1.49, €1.50, €1.55, €1.59, €1.62
 b) €0.75, €0.80, €0.82, €0.85, €0.89, €0.90
 c) €1.39, €1.40, €1.45, €1.47, €1.50, €1.52
 d) €1.55, €1.60, €1.65, €1.70, €1.73, €1.82
 e) €1.39, €1.40, €1.45, €1.55, €1.59, €1.65
 f) €2.29, €2.35, €2.36, €2.41, €2.60, €2.75
 g) €0.45, €0.46, €0.49, €0.52, €0.55, €0.60

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36. a) €6.55 b) €1.95
 c) €8.60 d) €10.79
 e) €10.79, €8.60, €6.55, €1.95

Rounding to the Nearest Ten

1. Teacher check
 2. a) 10 b) 20 c) 10
 d) 10 e) 30 f) 40
 g) 30 h) 50 i) 50
 j) 100 k) 120 l) 140
 m) 260 n) 950 o) 4680

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3. a) 110 b) 111
 4. a) 790 b) 540 c) 240
 d) 610 e) 990 f) 3460
 g) 1710 h) 2520 i) 15360
 j) 71350
 5. a) 36 b) 10
 c) 370 d) 20
 e) Teacher check

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Rounding to the Nearest Hundred

1. a) 100 b) 100 c) 100
 d) 100 e) 100 f) 200
 g) 200 h) 200 i) 300
 j) 400 k) 300 l) 400
 m) 700 n) 1400 o) 1700
 p) 2800 q) 4200 r) 8900
 s) 12600 t) 35100
 2. a) 2400 b) 2422
 3. a) 900, 880 b) 900, 904
 c) 3100, 3031 d) 500, 542
 e) 300, 297 f) 3900, 3869
 4. €1200

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Rounding to the Nearest Thousand

1. a) 1000 b) 1000 c) 2000
 d) 3000 e) 1000 f) 3000
 g) 4000 h) 7000 i) 4000
 j) 5000 k) 3000 l) 10000
 m) 8000 n) 10000 o) 13000
 p) 31000 q) 57000 r) 28000
 s) 41000 t) 93000
 2. €20000, €14000, €12000, €11000

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3. a) 7000, 6980
 b) 5000, 5410
 c) 13000, 12730
 d) 18000, 18175
 e) 4000, 4440
 f) 3000, 3561
 4. a) 7 b) 56 c) 278
 d) 4328 e) 51800 f) 96500

Rounding Decimals to the Nearest Whole Number

5. a) 5 b) 3 c) 9
 d) 5 e) 10 f) 12
 g) 24 h) 38 i) 44
 j) 57 k) 69 l) 90
 m) 97 n) 109 o) 113

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6. a) 2 b) 11 c) 26
 d) 31 e) 46 f) 5
 g) 7 h) 11 i) 19
 j) 63 k) 48 l) 142
 m) 1 n) 5 o) 30
 p) 404 q) 17 r) 253
 s) 9 t) 56

Homework

1. Teacher check
 2. a) 400 b) 50 c) 3000
 d) 10000 e) 5 f) 3000
 g) 20 h) 800 i) 20000
 j) 0 k) 5000 l) 8
 m) 800 n) 70 o) 6000
 3. Teacher check
 4. a) 240, 280, 320, 360, 400, 440, 480, 520, 560, 600
 b) 415, 385, 355, 325, 295, 265, 235, 205, 185
 c) 323, 393, 463, 533, 603, 673, 743, 813

- d) 902, 857, 812, 767, 722, 677, 632, 587, 542
 e) 234, 344, 454, 564, 674, 784, 894
 f) 1105, 1030, 955, 880, 705, 630, 555, 480

5. a) 1100, 110 b) 730, 73
 c) 2380, 238 d) 1400, 140
 e) 190, 19 f) 3430, 343
 g) 510, 51 h) 1680, 168
 i) 280, 28 j) 5220, 522

6. Teacher check

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7. a) $\frac{9}{10}$ b) $\frac{8}{100}$ c) 90
 d) 200 e) 3 f) $\frac{4}{100}$
 g) 1 h) 500 i) 30
 j) $\frac{2}{10}$
 8. a) 10 b) 20 c) 40
 d) 70 e) 100 f) 100
 g) 250 h) 810 i) 570
 j) 980 k) 1020 l) 2350
 m) 3820 n) 7900 o) 9250
 9. a) 100 b) 100 c) 200
 d) 300 e) 300 f) 500
 g) 500 h) 600 i) 800
 j) 900 k) 1000 l) 1300
 m) 1800 n) 3500 o) 7300
 10. a) 1000 b) 1000 c) 2000
 d) 3000 e) 4000 f) 4000
 g) 7000 h) 6000 i) 8000
 j) 8000 k) 9000 l) 10000
 m) 12000 n) 24000 o) 50000
 11. a) 3 b) 8 c) 13
 d) 7 e) 20 f) 7
 g) 28 h) 76 i) 3
 j) 91 k) 409 l) 281
 m) 39 n) 32 o) 540

3. Operations 1

Page 21

Think About

1. 200 million
 2. 4.5kg
 3. 13–14 hours

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1. Teacher check

Page 23

Adding Bigger Numbers

- Nathan 21026
Hannah 30564
Finola 47939
Dylan 19101
James 17044
Sarah 39015
- Mum 6907
Dad 6785
- 44514
- a) 14617m b) 27096m
- 72937
- Teacher check

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Subtracting Bigger Numbers

- Teacher check
- a) 2476 b) 3606 c) 253
d) 14 e) 9856 f) 5414
g) 2306 h) 8138 i) 1564
j) 5641 k) 3771 l) 8546
- 16696
- 6968
- 6710
- a) Spain b) Italy c) 39948
d) 1660 e) 5724 f) 93409
g) 17657 h) 24053

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Another Way to Estimate

- 148kg
- €5.21
- 89
- 1405km

Homework

- a) 851 b) 954 c) 1984
d) 9105 e) 10793 f) 9686
g) €4476 h) €13485
i) €34684 j) €73411

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- a) 686 b) 2522 c) 3996
d) 1109 e) 3025 f) 3975
g) 2982 h) 2811 i) 8419
j) 3819 k) 3321 l) 8619
- a) Carol O'Carroll
b) Count 1 = 2337
Count 2 = 1327
c) Phil Phillips
d) Tom Thomas 1317,

Lucy Lucey 776,
Phil Phillips 651,
Carol O'Carroll 2749

4. Number Theory 1

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Odd or Even?

- 17, 5, 21, 27, 103, 79, 45

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Factors and Products

- Teacher check

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Prime Numbers and Composite Numbers

- Teacher check
- a) prime, composite
b) composite
c) prime
- a) 9 b) 17 c) 11
d) 57

Number	Prime / Composite	Factors
7	Prime	1 x 7
12	Composite	1 x 12 2 x 6 3 x 4
19	Prime	1 x 19
20	Composite	1 x 20 2 x 10 4 x 5
27	Composite	1 x 27 3 x 9
43	Prime	1 x 43
33	Composite	1 x 33 3 x 11
37	Prime	1 x 37

- 1, 2, 4, 8, 16
- a) 1, 2, 3, 6, 9, 18
b) 1, 2, 11, 22
c) 1, 2, 3, 4, 6, 12
d) 1, 11
e) 1, 2, 3, 4, 6, 8, 12, 24
f) 1, 2, 4, 5, 10, 20
g) 1, 7, 49
h) 1, 2, 3, 5, 6, 10, 15, 30

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- a) 1, 2, 7, 14, 28
b) 1, 2, 3, 4, 6, 9, 12, 18, 36
c) 1, 2, 4, 5, 8, 10, 20, 40
d) 1, 2, 19, 38
e) 1, 3, 5, 9, 15, 45
f) 1, 2, 3, 6, 7, 14, 21, 42
g) 1, 2, 4, 8, 16, 32, 64
h) 1, 2, 4, 5, 10, 20, 25, 50, 100
- 12 = 1, 2, 3, 4, 6, 12
16 = 1, 2, 4, 8, 16
Common factors = 1, 2, 4
- a) 8 = 1, 2, 4, 8
10 = 1, 2, 5, 10
b) 9 = 1, 3, 9
15 = 1, 3, 5, 15
c) 14 = 1, 2, 7, 14
21 = 1, 3, 7, 21
d) 16 = 1, 2, 4, 8, 16
24 = 1, 2, 3, 4, 6, 8, 12, 24
e) 9 = 1, 3, 9
18 = 1, 2, 3, 6, 9, 18
f) 20 = 1, 2, 4, 5, 10, 20
40 = 1, 2, 4, 5, 8, 10, 20, 40

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Multiples

- a) 3, 6, 9, 12, 15, 18, 21
b) 12, 24, 36, 48
c) 8, 16, 24, 32, 40
d) 7, 14, 21, 28, 35, 42, 49, 56
e) 9, 18, 27, 36, 45, 54
f) 5, 10, 15, 20, 25, 30, 35, 40, 45

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2. No. Infinity.

Puzzler: 30

3. a) 44 – not a multiple of 7
b) 32 – not a multiple of 6
c) 21 – not a multiple of 11
d) 25 – not a multiple of 2
4. a) True b) False c) False
d) True e) False f) True
5. a) 324, 476 b) 732, 834, 918
c) 378, 504 d) 198, 935

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Homework

1. 24, 48, 2, 66, 52, 108
2. 15, 42, 27, 36, 63, 70, 45, 121
3. a) 1, 2, 3, 6, 9, 18
b) 1, 2, 3, 4, 6, 8, 12, 24
c) 1, 2, 4, 5, 10, 20
d) 1, 3, 11, 33
e) 1, 2, 4, 8, 16
f) 1, 2, 3, 5, 6, 10, 30
4. a) 1, 2, 4 b) 1, 2, 4
c) 1, 2, 3, 6 d) 1, 3, 9
e) 1, 5 f) 1, 2, 5, 10
5. a) 5, 10, 15, 20, 25, 30
b) 10, 20, 30, 40, 50, 60
c) 7, 14, 21, 28, 35, 42
d) 4, 8, 12, 16, 20, 24
e) 8, 16, 24, 32, 40, 48
f) 11, 22, 33, 44, 55, 66
6. a) True b) True c) False
d) True e) False f) True

5. Lines and Angles

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Lines

1. Teacher check
2. a) Parallel lines are lines that are always the same distance apart.
b) Perpendicular lines are lines that make a right angle with one another.

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3. Teacher check

4. Teacher check

Puzzler: HELEN

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Angles

1. Teacher check
2. a) smaller b) larger
3. Teacher check

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4. a) 90° b) 180°
5. a) smaller b) larger c) larger
6. Teacher check
7. Teacher check

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8. a) 120° , 240° b) 180° , 180°
c) 270° , 90° d) 30° , 330°
e) 210° , 150° f) 360°
9. a) Acute b) Obtuse
c) Right d) Reflex
e) Obtuse f) Acute
g) Full rotation h) Acute
i) Reflex j) Straight
k) Obtuse l) Acute
10. Teacher check
11. Teacher check
12. a) 90° b) 180° c) 180°
d) 360° e) 90° f) 90°
13. a) 90° b) 180° c) 270°
d) 120° e) 30° f) 45°

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14. Teacher check
15. a) 90° b) 90°
c) 180° d) 90°
16. Teacher check
17. Teacher check

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18. a) 30° b) 160° c) 55°
d) 135° e) 10° f) 90°
g) 45° h) 180°
19. Teacher check
20. Teacher check

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21. Teacher check
22. a) 5° b) 65° c) 30°
d) 185° e) 190° f) 230°
23. Teacher check
24. a) 30° b) 70° c) 45°

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25. Teacher check
26. Teacher check
27. straight, 180°
28. a) 45° b) 40° c) 50°
d) 500° e) 60° f) 60°

29. Teacher check

30. Teacher check

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Tangrams

1. Teacher check
2. Teacher check

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Homework

1. a) Parallel b) Oblique
c) Vertical d) Perpendicular
e) Horizontal
2. a) Obtuse b) Right
c) Straight d) Reflex
e) Acute
3. a) Obtuse b) Acute
c) Straight d) Reflex
e) Full rotation f) Right
g) Reflex h) Obtuse

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4. a) 80° b) 110° c) 40°
d) 130° e) 90°
5. Teacher check
6. a) 78° b) 60° c) 8°

6. Equations

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Make Number Sentences Out of Word Problems

1. Teacher check
2. a) 195 b) – c) 33
d) 36 e) 76 f) =
g) 82 h) 56 i) $\div$

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3. a) 5 b) $\frac{3}{4}$ c) 20
d) 50 e) – f) 2.1
g) 3 h) x i) 11:30am
4. a) False b) True
c) True d) False
e) False f) False
g) Teacher check
h) Teacher check
5. a) $30 \div 6 = 5$
b) $30 - 6 = 24$
c) $24 \div 6 = 4$
d) $30 - 13 = 17$
e) Teacher check



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6. a)

x	3
1	3
2	6
3	9
4	12
5	15
6	18

b)

-	11
100	89
90	79
80	69
70	59
60	49
50	39

c)

÷	5
10	2
20	4
30	6
40	8
50	10
60	12

7. 89

8. 520

9. 34

Make Word Problems from Number Sentences

1. Teacher check

Page 51 Solve Equations

1. a) 81 b) 117 c) 55
d) 16 e) 8 f) 116

g) 179 h) 14

2. $19 - 7 = 12$

3. $€40 - €22.50 = €17.50$

4. $6:30\text{pm} + 45\text{ mins} = 7:15\text{pm}$

5. $50c \times 4 = 200c (\text{€}2)$

6. a) 9329 b) 3856 c) 4768
d) 540 e) 187 f) 586
g) 1569 h) 5 i) 6.78
j) 608

Puzzler: Change the middle 10 to T0

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7. a) $14 \div 2 = 7$, $12 \div 2 = 6$

b) $14 + 18 = 32$,

$12 + 21 = 33$

c) $15 \times 2 = 30$

d) $22 - 16 = 6$

e) $14 + 18 + 22 + 10 = 64$;

$12 + 21 + 16 + 18 = 67$;

German Giants won

8. Teacher check

Puzzle Squares

1. a)

6	1	8
7	5	3
2	9	4

b)

x	4	11	6
9	36	99	54
7	28	77	42
12	48	132	72

c)

x	7	8	3
7	49	56	21
4	28	32	12
9	63	72	27

Page 53 Homework

1. a) + b) x c) -
d) ÷ e) - f) ÷

2. $€50 - €38.99 = €11.01$

3. $47 + 39 + 26 = 112$

4. $608 \div 8 = 76$

5. $16 \times 14 = 224$

6. a) 1084 b) 5821 c) 197
d) 4 e) 2.64 f) 32080
g) 21432 h) 47.6

7. Teacher check

7. Time

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Banana Bonanza

1. a) 97 b) 113 c) 138
d) 155 e) 200 f) 245
g) 402 h) 557

2. a) 1 min 8 sec
b) 1 min 25 sec
c) 1 min 43 sec
d) 3 min 12 sec
e) 2 min 37 sec
f) 3 min 28 sec
g) 4 min 49 sec
h) 6 min 57 sec

3. a) 76 b) 140 c) 214
d) 236 e) 240 f) 300
g) 342 h) 428

4. a) 0 hrs 57 min
b) 1 hr 12 min
c) 1 hr 33 min
d) 1 hr 42 min
e) 2 hrs 14 min
f) 2 hrs 35 min
g) 3 hrs 9 min
h) 3 hrs 31 min
i) 3 hrs 42 min

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Change Times from the 12-hour to the 24-hour Clock

1. a) 09:02 b) 11:15
c) 15:45 d) 00:26
e) 18:01 f) 20:53
g) 02:35 h) 22:18

2. a) 1:00pm b) 5:40am
c) 9:25pm d) 12:30am
e) 12:20pm f) 4:55pm
g) 11:05am h) 9:35am

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Adding Times

1. 9:15
2. a) 3:05 b) 4:15 c) 6:20
d) 4:15 e) 6:05 f) 10:20

3.

	Finish	Start	Finish
		24	24
The Secret Room	10:43pm	20:15	22:43
Attack of the Deadly Carrots	10:12pm	19:55	22:12
Supercat	11:14pm	21:25	23:14
Sleepwalkers	1:37am	23:40	01:37

c) 2:18am d) 7:05pm

Puzzler: Yes, 3pm

4. a) 4 hrs 5 mins
b) 6 hrs 5 mins
c) 7 hrs 10 mins
d) 8 hrs 42 mins
e) 7 hrs 19 mins
f) 6 hrs 30 mins
g) 11 hrs 12 mins
h) 13 hrs 17 mins

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5. 6 hrs 27 mins
6. 2 hrs 25 mins

Subtracting Times

1. a) 0:40 b) 0:45 c) 0:40
d) 1:25 e) 1:45 f) 3:55
2. a) 1 hr 9 min
b) 2 hrs 33 mins
c) 26 mins
d) 2 hrs 45 mins
e) 2 hrs 31 mins
f) 1 hr 48 mins
g) 1 hr 46 mins
h) 36 mins

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Reading a Timetable

1.

Journey	Departure Time	Arrival Time
Cork to Galway	09:15	12:45
Dublin to Limerick	13:30	16:10
Belfast to Sligo	11:25	14:38
Athlone to Tralee	22:40	01:15

- a) 1:22pm
- b) 3:42pm
- c) Cork to Galway = 3 hrs 30 mins
Dublin to Limerick = 2 hrs 40 mins
Belfast to Sligo = 3 hrs 13 mins
Athlone to Tralee = 2 hrs 35 mins
- d) Longest journey is Cork to Galway
Shortest journey is Athlone to Tralee
- e) Longest journey was 55 mins longer than shortest journey

Work Out the Difference between Times

2. Teacher check
3. a) 2 hrs 28 mins
b) 2 hrs 41 mins
c) 2 hrs 18 mins
d) 9 hrs 32 mins
e) 2 hrs 16 mins
f) 4 hrs 37 mins
g) 19 hrs 36 mins
h) 5 hrs 53 mins

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4. a) 4:30pm b) 6:45pm
c) 8:25pm d) 1:35am
5. a) 20 mins b) 1 hr 45 mins
c) 45 mins d) 2 hrs 20 mins
6. a) 3 hrs 5 mins
b) 2 hrs 30 mins
c) 2 hrs 20 mins
d) 4 hrs 17 mins
7. 1 hr 25 mins
8. Teacher check

Homework

1. a) 86 sec b) 195 sec
c) 167 sec d) 331 sec
e) 247 sec f) 592 sec
g) 371 sec h) 640 sec
2. a) 98 mins b) 118 mins
c) 202 mins d) 269 mins
e) 146 mins f) 430 mins
g) 309 mins h) 524 mins
3. a) 5 hrs 11 mins
b) 6 hrs 26 mins
c) 4 hrs 13 mins
d) 6 hrs 23 mins
e) 4 hrs 32 mins
f) 6 hrs 31 mins
g) 10 hrs 31 mins
h) 11 hrs 26 mins
i) 2 hrs 19 mins
j) 45 mins
k) 3 hrs 46 mins
l) 3 hrs 49 mins
m) 6 hrs 44 mins
n) 4 hrs 57 mins
o) 26 mins
p) 3 hrs 57 mins

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4. a) 45 mins
b) Maths
c) 1 hr 30 mins
d) 10 mins
e) 45 mins
f) 4 hrs 50 mins

8. Fractions 1

Page 61

Puzzler: Hector's slices of pizza were bigger than Horace's

Talk About

1. Teacher check
2. Teacher check
3. Teacher check
4. Denominator
5. How many equal pieces something has been divided into
6. Numerator
7. How many of the equal pieces are involved
8. a) Lisa b) Tina
c) Tim and Conor
d) Fractions are equivalent

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1. a) 7 b) 9 c) 5
d) 10 e) 12 f) 47
2. a) $\frac{4}{8}$ b) $\frac{3}{12}$ c) $\frac{2}{6}$
d) $\frac{2}{12}$ e) $\frac{6}{15}$ f) $\frac{8}{12}$
3. a) 9 b) 4 c) 7
d) 3 e) 12 f) 8

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

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Homework

1. a) $\frac{2}{8}$ b) $\frac{6}{9}$ c) $\frac{4}{20}$
d) $\frac{9}{12}$ e) $\frac{5}{10}$ f) $\frac{6}{10}$
2. Teacher check
3. a) $\frac{1}{12}$ b) $\frac{2}{3}$ c) $\frac{3}{4}$
d) $\frac{2}{3}$ e) $\frac{3}{5}$ f) $\frac{3}{4}$
g) $\frac{2}{3}$ h) $\frac{5}{6}$ i) $\frac{3}{7}$
4. a) $\frac{6}{7}$ b) $\frac{4}{7}$ c) $\frac{3}{4}$
d) $\frac{3}{8}$ e) $\frac{5}{6}$ f) $\frac{3}{4}$
g) $\frac{1}{6}$ h) $\frac{4}{5}$



10. 2-D Shapes

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Talk About

- Isosceles triangle
 - Rectangle
 - Square
 - Pentagon
 - Circle
 - Parallelogram
 - Hexagon
- Teacher check

Page 67

- Triangle
 - Octagon
 - Square
 - Isosceles triangle
 - Pentagon
 - Rectangle

Polygons

- 3, 3
 - 8, 8
 - 4, 4
 - 6, 6
 - 4, 4
 - 4, 4

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- Pentagon 5, 5; Hexagon 6, 6
- Teacher check

Puzzler: True

- Teacher check

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Triangles

- 3, 3, 60°
 - 2, 2
 - 0, 0
 - a = isosceles b = scalene
 - c = equilateral d = scalene
 - e = equilateral f = isosceles
 - g = scalene h = scalene

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Puzzler: Equilateral triangle

Quadrilaterals

- Teacher check
- Teacher check

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Tessellations

- Teacher check
- Teacher check
-

	Tessellate: Yes/No
Circle	No
Parallelogram	Yes
Isosceles triangle	Yes
Trapezium	Yes
Pentagon	Yes
Hexagon	Yes
Rectangle	Yes
Semi-circle	No

- Teacher check
- Teacher check

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- Teacher check
- Teacher check
- Teacher check

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Symmetry

- Yes, 1 on each
- Teacher check
- a) to e) are symmetrical;
 - f) is not

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- c)

Shape	Number of Sides	Number of Angles	Symmetrical? Yes or No	Number of Lines of Symmetry
Square	4	4	Yes	4
Rectangle	4	4	Yes	2
Equilateral triangle	3	3	Yes	3
Trapezium	4	4	Yes	1
Hexagon	6	6	Yes	6

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Tangrams

- Teacher check
- Teacher check

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Homework

-

Polygon	Regular Polygon	Other
Rhombus	Equilateral triangle	Circle
Parallelogram	Pentagon	
Rectangle	Hexagon	
Isosceles triangle	Square	
Scalene triangle		

- Teacher check
- Teacher check
- Teacher check
- Teacher check

11. Operations 2

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Multiplication

- Teacher check
- 1112
 - 1991
 - 2232
 - 3324
 - 2128
 - 1630

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- Teacher check
- T, D, A, C, Y
- Teacher check
- Teacher check
 - Teacher check

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3. a) 1976 b) 3572 c) 7512 d) 8608 e) 7174
f) 12528 g) 6132 h) 9744 i) 12195 j) 4347
4. a) 1081 b) 1615 c) 2652 d) 1932 e) 848
f) 3690 g) 40584 h) 44988 i) 26492 j) 35872
k) 60905 l) 40944

Puzzler: 12, 24, 36, 48

5. 2730
6. 14256

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7. Teacher check
8. 27300g or 27kg 300g
9.

x	95	126	173	469	724
27	2565	3402	4671	12663	19548
18	1710	2268	3114	8442	13032

Division

1. a) 21 b) 22 c) 69 d) 57 e) 36
f) 119 g) Teacher check

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2. a) 82 b) 147 c) 167 d) 139 e) 91
f) 356 g) 793 h) 1297 i) 1857 j) 1627
k) 677 l) 247 m) 832 R 6 n) 108 R 8
o) 422 R 5 p) 557 R 5 q) 829 R 1 r) 1788 R 2
3. 64km
4. €764
5. 474 boxes and 6 left over
6. €583 per month
7. 763 jumps

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8. a) 3 sweets each and none left over
b) 4 sweets each and none left over
c) 3 sweets each and 5 left over
d) 5 sweets each and 4 left over
e) 7 sweets each and none left over
f) 8 sweets each and 13 left over

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9. a) 32 b) 41 c) 42
10. a) 7 b) 9 c) 5 d) 6 e) 8 f) 9

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11. a) 4 b) 6 c) 9 d) 5 e) 8 f) 7
g) 4 h) 7 i) 6 j) 8 k) 3 l) 5
12. a) 6 R 16 b) 7 R 29 c) 7 R 24 d) 6 R 3 e) 6 R 8 f) 7 R 85
g) 8 R 22 h) 9 R 32 i) 2 R 63 j) 8 R 64 k) 8 R 30 l) 7 R 16

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13. a) 18 b) 14 c) 13 d) 18 e) 19
f) 33 g) 23 h) 25 i) 24 j) 37
k) 42 l) 36 m) 31 R 16 n) 59 R 7 o) 23 R 27
p) 15 R 5 q) 18 R 39 r) 17 R 1

14. 53

15. 24

16. 18

17. 25 times

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18.

Number of Items Bought	Cost of Item	Total Cost
27	€43	€1161
39	€18	€702
23	€35	€805
56	€145	€8120
226	€19	€4294
26	€33	€858
45	€16	€720
28	€68	€1904
13	€67	€871
49	€294	€14406

19. a) 14 b) 23 c) 14.5
d) 8.5 e) 14.25 f) 27.25

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Homework

1. a) 1368 b) 1529 c) 2242
d) 3087 e) 3654 f) 5152
g) 7192 h) 5850 i) 4794
j) 6630 k) 8947 l) 7068
2. a) 19 b) 19 c) 49
d) 63 e) 49 f) 89
3. a) 258 b) 638 R 2
c) 469 d) 836 R 2
e) 1365 R 5 f) 394
g) 954 h) 1247 R 6
i) 483 j) 573
k) 923 l) 384
4. a) 5 b) 7 c) 6
d) 7 e) 8 f) 9
5. a) 8 b) 7 c) 5
d) 4 e) 9 f) 3
6. a) 9 R 9 b) 8 R 5 c) 8 R 3
d) 8 R 18 e) 7 R 13 f) 7 R 15
7. a) 17 b) 24 c) 14
d) 21 R 9 e) 25
f) 15 R 17

12. Chance

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Talk About

- Teacher check
- Teacher check
- Teacher check
- Teacher check

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- Teacher check
- Teacher check
- Teacher check

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Puzzler: Gráinne was right because there are only 5 possible days on which she could have started school, but there are 7 possible days on which her birthday could fall – the fewer the options, the better the chance.

- There is a 1 in 3 chance of picking a red crayon/marker
- Teacher check
- a) 1 in 2 chance
b) 1 in 3 chance
c) 1 in 6 chance
- Teacher check

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Let's Play: What Are the Chances?

- a) 1 in 6 b) 1 in 30 c) 1 in 15
d) 1 in 2 e) 1 in 4
- a) 1 in 13 b) 1 in 4 c) 2 in 5

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- a) 9 in 31 b) 15 in 31
c) Fruit or cheese
- Teacher check

Wheel of Fortune

- €20 b) 5 in 12
- €100 d) 1 in 12
- Less chance of winning the bigger prizes
- 20, 40, 100

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Homework

- Teacher check
- Teacher check
- Teacher check
- a) 1 in 12
b) 1 in 7 c) 1 in 4

13. Fractions 2

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Estimating the Sum of 2 Fractions

- $\frac{4}{4}$ or 1
- $\frac{6}{8}$

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- a) $\frac{4}{5}$ b) $\frac{5}{7}$ c) $\frac{7}{9}$
d) $\frac{8}{8}$ e) $\frac{10}{11}$ f) $\frac{10}{10}$
g) 1

Common Denominators

- a) $\frac{3}{4}$ b) Teacher check
- a) $\frac{4}{6}$ b) $\frac{3}{8}$ c) $\frac{3}{6}$ d) $\frac{5}{8}$

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Adding Fractions

- a) $\frac{5}{6}$ b) $\frac{5}{12}$ c) $\frac{7}{10}$ d) $\frac{8}{15}$
e) $\frac{9}{20}$ f) $\frac{11}{24}$ g) $\frac{5}{18}$ h) $\frac{7}{24}$
i) $\frac{17}{60}$ j) $\frac{13}{30}$ k) $\frac{7}{20}$ l) $\frac{3}{12}$
- a) $\frac{11}{10}$ or $1\frac{1}{10}$ b) $\frac{9}{8}$ or $1\frac{1}{8}$
c) $\frac{29}{24}$ or $1\frac{5}{24}$ d) $\frac{48}{35}$ or $1\frac{13}{35}$
e) $\frac{25}{18}$ or $1\frac{7}{18}$ f) $\frac{31}{20}$ or $1\frac{11}{20}$
g) $\frac{29}{21}$ or $1\frac{8}{21}$ h) $\frac{61}{40}$ or $1\frac{21}{40}$
i) $\frac{15}{12}$ or $1\frac{3}{12}$
- $\frac{11}{12}$
- $\frac{37}{55}$
- $\frac{13}{63}$
- $\frac{31}{36}$ m

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Subtracting Fractions

- a) $\frac{3}{4}$ b) $\frac{3}{7}$ c) $\frac{3}{10}$
d) $\frac{1}{3}$ e) $\frac{4}{9}$ f) $\frac{5}{8}$
g) $\frac{7}{12}$ h) $\frac{8}{11}$ i) $\frac{5}{6}$

$$2. \frac{7}{9}$$

$$3. \frac{7}{11}$$

- a) $\frac{5}{8}$ b) $\frac{4}{9}$ c) $\frac{1}{4}$
d) 0 e) $\frac{1}{10}$ f) $\frac{31}{88}$
g) $\frac{1}{12}$ h) $\frac{1}{84}$ i) $\frac{1}{18}$

$$5. \frac{11}{40}$$

$$6. \frac{9}{40} \text{ m}$$

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Homework

- a) $\frac{4}{4}$ b) $\frac{5}{5}$ c) $\frac{6}{8}$
d) $\frac{7}{9}$ e) $\frac{5}{7}$ f) $\frac{6}{6}$
- a) $\frac{7}{12}$ b) $\frac{7}{8}$ c) $\frac{6}{10}$ d) $\frac{5}{8}$
- a) $\frac{3}{6}$ b) $\frac{3}{8}$ c) $\frac{4}{9}$
d) $\frac{4}{12}$ e) $\frac{11}{30}$ f) $\frac{13}{40}$
- a) $\frac{26}{18}$ OR $1\frac{8}{18}$
b) $\frac{19}{12}$ OR $1\frac{7}{12}$
c) $\frac{39}{24}$ OR $1\frac{15}{24}$
d) $\frac{29}{18}$ OR $1\frac{11}{18}$
e) $\frac{25}{24}$ OR $1\frac{1}{24}$
f) $\frac{29}{24}$ OR $1\frac{5}{24}$
- a) $\frac{1}{6}$ b) $\frac{2}{9}$ c) $\frac{3}{8}$
d) $\frac{1}{4}$ e) $\frac{2}{5}$ f) $\frac{1}{10}$
- a) $\frac{3}{10}$ b) $\frac{7}{12}$ c) $\frac{1}{8}$
d) $\frac{2}{9}$ e) $\frac{1}{24}$ f) $\frac{3}{20}$

14. Number Theory 2

Page 100

Tired of Checking for Primes?

- False

Page 101

Rectangular Numbers

1. Teacher check
2. Teacher check
3. Teacher check

Puzzler: 11 teams

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Square Numbers

4. a) 36 b) 81 c) 196
d) 289 e) 625 f) 784
5. a) 25 b) 81 c) 64
d) 16 e) 100 f) 36

Homework

1. a) No b) Yes c) Yes
d) No e) Yes f) Yes
2. Teacher check
3. a) 25 b) 64 c) 144
d) 361 e) 576 f) 900

15. The Circle

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Talk About

1. Teacher check

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2. Teacher check
3. a) 6cm b) 22cm c) 5cm
d) 12.2cm e) 14cm f) 9.8cm
g) 24.4cm h) 17cm i) 11cm
4. a) 8cm b) 12cm
c) 6.4cm d) 5.1cm
e) 15.3cm f) 5.5cm
g) 12.5cm h) 9.6cm
i) 4.25cm
5. Teacher check
6. Teacher check

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Puzzler: Draw the dot. Fold the edge of the paper in so that it is touching the nib of the pen or pencil. Draw out onto the fold. Then remove the fold from under the pen or pencil and begin the circle from there.

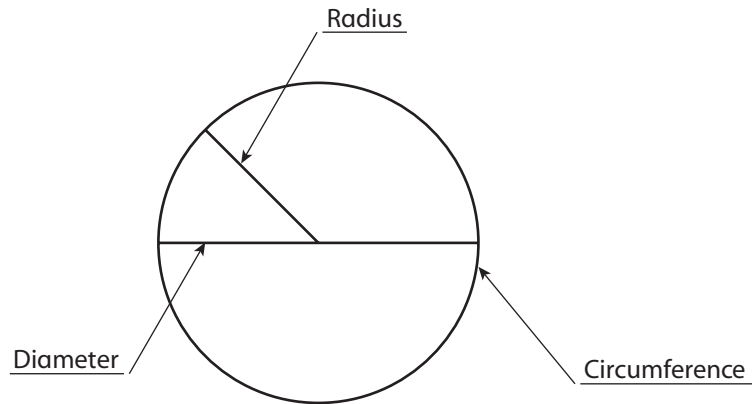
7. 13, 6, 19
8. a) 7 b) 28

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9. Teacher check

Homework

1.



2.

	Radius	Diameter
Circle A	26cm	52cm
Circle B	19.5cm	39cm
Circle C	71.4cm	142.8cm
Circle D	6.75m	13.5m
Circle E	1.298km	2.596km
Circle F	16.85cm	33.7cm

3. Teacher check
4. Teacher check

16. Fractions 3

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Talk About

1. a) $\frac{5}{9}$ b) $\frac{2}{3}$ c) $\frac{5}{6}$ d) = e) $\frac{4}{9}$ f) =
g) $\frac{2}{3}$ h) $\frac{3}{6}$ i) $\frac{8}{9}$

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Puzzler: 54 people

2. Teacher check

Change Mixed Numbers into Improper Fractions

1. a) $\frac{6}{5}$ b) $\frac{5}{3}$ c) $\frac{5}{2}$ d) $\frac{7}{4}$ e) $\frac{7}{3}$ f) $\frac{19}{6}$
g) $\frac{13}{5}$ h) $\frac{14}{9}$ i) $\frac{21}{8}$ j) $\frac{21}{4}$ k) $\frac{15}{2}$ l) $\frac{30}{7}$

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Change Improper Fractions into Mixed Numbers

1. a) $1\frac{1}{8}$ b) $1\frac{3}{10}$ c) $2\frac{1}{2}$ d) $2\frac{1}{4}$ e) $2\frac{2}{3}$ f) $2\frac{2}{5}$
g) $1\frac{5}{6}$ h) $5\frac{1}{3}$ i) $1\frac{10}{11}$ j) $2\frac{1}{12}$ k) $3\frac{3}{8}$ l) $8\frac{3}{4}$
m) $6\frac{5}{7}$ n) $6\frac{2}{9}$ o) $1\frac{8}{9}$ p) $8\frac{3}{10}$ q) $7\frac{2}{9}$ r) $9\frac{1}{8}$
s) $4\frac{5}{12}$ t) 12

Puzzler: $3\frac{3}{4}$ oranges



Page 110**Write Whole Numbers as Improper Fractions**

1. a) $\frac{10}{2}$ b) $\frac{28}{7}$ c) $\frac{50}{5}$
 d) $\frac{42}{6}$ e) $\frac{72}{8}$ f) $\frac{36}{3}$
 g) $\frac{77}{11}$ h) $\frac{36}{4}$ i) $\frac{70}{10}$
 j) $\frac{54}{9}$ k) $\frac{60}{12}$ l) $\frac{64}{8}$

2. a) Teacher check
 b) Teacher check
 c) 2 d) 4

3. a) 9 b) $2\frac{1}{2}$ c) $3\frac{3}{4}$

Page 111**Adding Mixed Numbers**

1. a) $1\frac{5}{6}$ b) $5\frac{8}{9}$ c) $3\frac{5}{8}$
 d) $4\frac{7}{10}$ e) $5\frac{7}{12}$ f) $2\frac{17}{18}$
 g) $10\frac{11}{15}$ h) $7\frac{37}{24}$ OR $8\frac{13}{24}$
 i) $5\frac{7}{6}$ OR $6\frac{1}{6}$
 j) Teacher check

2. $7\frac{17}{20}$

3. $3\frac{29}{24}$ m OR $4\frac{5}{24}$ m

Page 112**Subtracting Mixed Numbers**

1. a) $\frac{1}{8}$ b) $\frac{2}{9}$ c) $1\frac{3}{10}$
 d) $2\frac{7}{12}$ e) $2\frac{9}{35}$ f) $3\frac{1}{12}$
 2. a) $\frac{3}{4}$ b) $\frac{5}{8}$ c) $\frac{7}{10}$
 d) $2\frac{17}{18}$ e) $2\frac{17}{24}$ f) $1\frac{13}{20}$
 3. $2\frac{5}{12}$

Page 113**Find a Fraction of an Amount**

1. a) €22 b) €7 c) €29
 d) €15 e) €21 f) €23
 g) €32 h) €18
 2. a) 36 b) 39 c) 47
 d) 58 e) 138 f) 283
 g) 85 h) 339

3. a) €21 b) €52 c) €81
 d) €126 e) €115 f) €203
 g) €66 h) €120

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4. 261cm
 5. 147
 6. 395
 7. €266, €190

Find the Whole Amount from a Fraction

1. a) €50 b) €144 c) €54
 d) €100 e) €90 f) €144
 2. a) €129 b) €152 c) €640
 d) €168 e) €423 f) €253
 g) €531 h) €264

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3. 60
 4. 688 stamps
Puzzler: Mother is 63. It will be 7 years.

Express One Amount as a Fraction of Another

5. a) $\frac{1}{4}$ b) $\frac{7}{10}$ c) $\frac{4}{7}$
 d) $\frac{7}{12}$ e) $\frac{5}{12}$ f) $\frac{7}{12}$
 g) $\frac{43}{59}$ h) $\frac{3}{10}$

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6. $\frac{3}{4}$
 7. $\frac{4}{9}$
 8. $\frac{2}{3}$
 9. $\frac{5}{8}$

Homework

1. a) $\frac{4}{3}$ b) $\frac{11}{7}$ c) $\frac{11}{6}$
 d) $\frac{8}{3}$ e) $\frac{13}{5}$ f) $\frac{13}{4}$
 g) $\frac{29}{8}$ h) $\frac{25}{6}$ i) $\frac{29}{9}$
 j) $\frac{11}{2}$ k) $\frac{27}{4}$ l) $\frac{39}{5}$
 2. a) $1\frac{3}{7}$ b) $1\frac{5}{6}$ c) $1\frac{7}{8}$
 d) $3\frac{1}{3}$ e) $2\frac{4}{5}$ f) $4\frac{1}{4}$
 g) $1\frac{4}{9}$ h) $4\frac{2}{5}$ i) $3\frac{3}{10}$

- j) $11\frac{1}{2}$ k) $3\frac{8}{11}$ l) $3\frac{5}{6}$
 m) $6\frac{1}{8}$ n) $7\frac{3}{7}$ o) $5\frac{7}{12}$
 p) $9\frac{7}{9}$

3. a) $\frac{16}{4}$ b) $\frac{24}{3}$ c) $\frac{54}{6}$
 d) $\frac{45}{9}$ e) $\frac{56}{7}$ f) $\frac{72}{8}$
 g) $\frac{55}{5}$ h) $\frac{82}{12}$

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4. a) $3\frac{5}{12}$ b) $4\frac{3}{8}$ c) $4\frac{13}{20}$
 d) $6\frac{5}{12}$ e) $9\frac{5}{24}$ f) $10\frac{17}{18}$
 5. a) $1\frac{5}{12}$ b) $2\frac{11}{18}$ c) $1\frac{1}{24}$
 d) $1\frac{7}{8}$ e) $3\frac{7}{12}$ f) $3\frac{11}{18}$
 6. a) €55 b) €48 c) €84
 d) €75 e) €588 f) €370
 7. a) €584 b) €588 c) €1468
 d) €920 e) €960 f) €2695
 8. a) €1170 b) €2051 c) €1683
 d) €1560 e) €3724 f) €1947
 9. a) $\frac{3}{4}$ b) $\frac{7}{20}$ c) $\frac{3}{4}$
 d) $\frac{6}{25}$ e) $\frac{2}{3}$ f) $\frac{9}{73}$

18. Decimals**Page 118****Write Tenths as Decimals**

1. a) 0.2 b) 0.8 c) 0.6
 d) 0.4
 2. a) 1.1 b) 1.9 c) 1.4
 d) 1.5 e) 2.3 f) 3.0
 g) 3.7 h) 4.1

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3. a) $\frac{8}{10}$ b) $\frac{1}{10}$ c) $\frac{7}{10}$
 d) $\frac{9}{10}$ e) $\frac{15}{10}$ f) $\frac{24}{10}$
 g) $\frac{43}{10}$ h) $\frac{36}{10}$

Write Hundredths as Decimals

4. a) 0.03 b) 0.08 c) 0.09
 d) 0.05
 5. a) 0.16 b) 0.12 c) 0.29
 d) 0.35 e) 0.47 f) 0.53
 6. a) €1.78 b) €2.01 c) €3.76
 d) €4.09 e) €5.20 f) €9.00

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7. 45.13
8. a) 324.51 b) 170.38
c) 923.05 d) 405.79

9. a) $\frac{8}{10}$ b) 8 c) $\frac{8}{100}$
d) 80 e) 800 f) $\frac{8}{100}$

10. a) $\frac{9}{10}$, $\frac{6}{100}$ b) $\frac{1}{10}$, $\frac{4}{100}$
c) $\frac{0}{10}$, $\frac{5}{100}$ d) $\frac{8}{10}$, $\frac{3}{100}$

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Write Thousandths as Decimals

1. a) 10 b) 10 c) 10
d) 100 e) 1000 f) 0.11
2. a) 0.005 b) 0.001 c) 0.009
d) 0.007 e) 0.004 f) 0.008
3. a) 0.079 b) 0.043 c) 0.092
d) 0.184 e) 0.267 f) 0.805

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4. $\frac{5}{1000}$
5. Teacher check
6. a) 0.004m b) 0.007m
c) 0.006m d) 0.009m
e) 0.005m
7. a) 0.007kg b) 0.009km
c) 0.024kg d) 0.065kg
e) 0.238km f) 0.376km
g) 0.237kg h) 0.978km
i) 0.006kg

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8. a) 0.002 b) 0.041 c) 0.323
d) 0.999 e) 0.417 f) 0.847
9. a) 0.2 b) 0.45 c) 0.625
d) 0.06 e) 0.924 f) 0.004
10. a) 7 b) 5 c) 2
d) 9 e) 7 f) 4
g) 2 h) 6 i) 9

Write Other Fractions as Decimals

1. a) 0.4 b) 0.8 c) 0.6
2. a) 6.7 b) 10 c) 4.59
d) 7.11 e) 1.255 f) 5.629

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3. Teacher check
4. a) 8 b) 3 c) 14
d) 29 e) 6 f) 10
g) 126 h) 27 i) 20
5. a) 5.016, 5.12, 5.2, 5.25, 5.78
b) 13, 13.47, 13.6, 13.61, 13.655
c) 128.172, 128.42, 128.8, 128.97, 129
d) 1.57, 1.573, 1.753, 1.8, 1.82
e) 425.001, 425.01, 425.1, 425.2, 425.25

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6. a) > b) = c) <
d) < e) < f) <
7. a) 3.6, 3.7, 3.8
b) 25.129, 25.13, 25.131
c) 2, 2.2, 2.4
d) 56.8, 56.85, 56.9
e) 3.754, 3.753, 3.752
f) Teacher check
8. 1.669kg, 1.907kg, 1.947kg, 2.81kg, 3.1kg, 3.182kg, 4.026kg

Puzzler: The magic number is 3.6

1.4	0.8	1.4
1.0	1.3	1.3
1.2	1.5	0.9

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Adding Decimals

1. a) 20.43 b) 67.489 c) 41.52
d) 38.38 e) 144.9 f) 118.75
2. a) 5.925kg b) 14.74

Subtracting Decimals

3. a) 13.52 b) 37.24
c) 77.28 d) 38.06
e) 2.385 f) 311.279
g) 19.414 h) 13.119
i) 85.572
4. 2m, 5.88m, 0.12m, 2.82m, 10.82m

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Multiplying Decimals

1. a) 23.5 b) 451 c) 61.2
d) 234.9 e) 6731 f) 12130

- g) 1903 h) 3588 i) 25298
2. a) 72 b) 5812 c) 209
d) 6879 e) 100.9 f) 25
g) 320 h) 4700 i) 29.06
3. a) 43.26 b) 180.32 c) 21.112
d) 673.5 e) 156.18 f) 48.75
g) 13.41 h) 39.914 i) 7.84

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4. a) €38.86 b) €94.25
c) €180.80 d) €10.24
5. a) 193.66 b) 203.125
c) 916.56 d) 147.888
e) 234 f) 2392.3

Dividing Decimals

1. Teacher check
2. a) 1.2 b) 6.34 c) 1.825
d) 5.26 e) 9.98 f) 123.3
g) 0.14 h) 3.7 i) 0.32

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3.

	÷ 10	÷ 100	÷ 1000
34.65	3.465	0.3465	0.03465
168.2	16.82	1.682	0.1682
3.795	0.3795	0.03795	0.003795
1258.6	125.86	12.586	1.2586
540.01	54.001	5.4001	0.54001
28.42	2.842	0.2842	0.02842
189.7	18.97	1.897	0.1897

4. a) 0.39 b) 0.2188
c) 6.125 d) 0.5025
e) 9.92 f) 9.68
g) 3.1317 h) 0.06254
i) 0.01275

Calculating Decimals

1. a) 0.25 b) 0.875 c) 0.75
d) 0.8 e) 0.375 f) 0.625
g) 0.6

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Homework

1. a) 0.7 b) 0.5 c) 0.9
d) 0.3 e) 1.6 f) 2.4
g) 3.2 h) 4.8
2. a) $\frac{6}{10}$ b) $\frac{3}{10}$ c) $\frac{4}{10}$
d) $\frac{8}{10}$ e) $\frac{17}{10}$ f) $\frac{51}{10}$
g) $\frac{87}{10}$ h) $\frac{99}{10}$

3. Teacher check
4. a) 0.06 b) 0.07 c) 0.11
d) 0.23 e) 0.18 f) 0.37
g) 0.85 h) 0.9
5. a) $\frac{1}{100}$ b) 5 c) $\frac{7}{10}$
d) 60 e) 4 f) $\frac{5}{100}$
6. a) $\frac{7}{1000}$ b) $\frac{9}{1000}$
c) $\frac{17}{1000}$ d) $\frac{79}{1000}$
e) $\frac{183}{1000}$ f) $\frac{431}{1000}$
7. a) 8 b) 4 c) 6
d) 7 e) 3 f) 2
8. a) 2 b) 9 c) 16
d) 26 e) 47 f) 7
g) 46 h) 2 i) 19

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9. a) 7.04, 7.14, 7.145, 7.4
b) 12.034, 12.304, 12.34, 12.403
c) 71.19, 71.2, 71.21, 72.01
d) 0.278, 0.728, 0.827, 0.872
10. a) 49.654 b) 282.503
c) 85.294 d) 650.714
e) 39.397 f) 35.112
11. a) 0.37 b) 39.185
c) 256.31 d) 32.595
e) 4.661 f) 7.313
12. a) 16.47 b) 192.56
c) 47.698 d) 812.84
e) 1189.944 f) 61.975
13. a) 0.026 b) 1.45
c) 58.3 d) 5.4
e) 0.89 f) 2.7

19. Money

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Talk About

1. Teacher check
2. Teacher check
3. a) €27 b) €15.99
c) €0.39 d) €12.25

Value for Money

4. a) A banana for 15c
b) 2 pencils costing 60c, 30c each

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5.

A	B	Better Value: A or B
5 apples for 90c	4 apples for 80c	A
3 pens for 1.20	8 pens for 2.80	B
7 bars for 1.75	10 bars for 2.20	B

6. B is better value (3 for 15)

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Calculating Shopping Bills

1. a) €14 b) €12.80 c) €17.05 d) €3 e) €3.90 f) €50.75
2. a) €7.80 b) €7.96 c) €11.50 d) €3.74 e) €11.96 f) €4.50
g) €9.50 h) €56.96
3. Teacher check 4. Teacher check

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Calculating Wages

1. €72 2. €270 3. €12
4. €672 5. €3360 6. 5 weeks
7. €8.25 per hour
- 8.

Rate	Wages per Hour (€)	Wages per Day (€)	Wages per Week (€)
A	10.60	84.80	424.00
B	12.00	96.00	480.00

Puzzler: Thomas = 30.59. Robbie = 122.35. Peter = 367.06

9. €1215.36 10. €22000

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11. 2995
12. 55
13. 7808.98
14. a) 85,000 b) 27430

Homework

1. Pears = €2.24, Pasta = €5.52, Yoghurts = €2.56,
Vinegar = €5.00, Plums = €1.56, Doughnuts = €2.88

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2. 77
3. Susan = €270, Alan = €204, Lauren = €364,
Ahmed = €225.60, Rory = €413, Yvonne = €288
- 4.

Name	Hourly Pay	Hours Worked per Day	Days Worked per Week	Weekly Wage
Patrick	€9	8	3	€216
Amber	€8.50	7	4	€238
Yolanda	€14	3	6	€252

20. Rules and Properties

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Talk About

- Teacher check

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Do the Work Inside the Brackets First

- 32
 - 46
 - 9
 - 114
 - 78
 - 41
 - 168
 - 129
 - 105
 - 43
 - 132
 - 252
 - 33
 - 33
 - 79
- 432
 - 756
 - 9
 - 59
 - 12
 - 82
 - 7
 - 100
 - 6
 - 5
 - 7
 - 266
 - 9
 - 468
 - 4
- 12641
 - 3807
 - 1702
 - 216
 - 896
 - 470

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BODMAS

- 66
 - 84
 - 113
 - 567
 - 783
 - 324
 - 347
 - 31
 - 368
 - 464
 - 79
 - 936
- 4148
 - 4679
 - 10156
 - 3005
 - 8025
 - 496

Patterns

- Teacher check

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- Teacher check
- Teacher check
- Teacher check
- Teacher check
- Teacher check

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- 2, 6, 10, 14, 18, 22, 26, 30
 - 47, 41, 35, 29, 23
 - 3, 9, 27, 81, 243, 729, 2187
 - 96, 48, 24, 12, 6, 3

Recognise Patterns in Number Sequences

- Add 4
 - Subtract 13
 - Multiply by 2
 - Add 28

- Divide by 5
 - Divide by 3
 - Subtract 9
 - Multiply by 6
- 25
 - 248
 - 48
 - 31
 - 90, 109, 128
 - 47, 32, 17
 - 162, 486, 1458
 - 12, 6, 3

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Extending Number Sequences

- 26, 37, 50
 - 24, 19, 13
 - 31, 33, 33
 - 15, 21, 28
 - 30, 25, 22
 - 190, 210, 220
 - 10, 14, 13
 - 28, 30, 24
- 6, 9, 27, 24, 8, 11, 14, 42, 39
- 12, 7, 35, 40, 8, 3, 15, 10, 50
- Teacher check

Homework

- Teacher check

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- 52
 - 69
 - 31
 - 234
 - 255
 - 91
 - 42
 - 8
 - 50
 - 8
 - 85
 - 9
- 4858
 - 860
 - 1121
 - 259
 - 2078
 - 997
- Add 4
 - Subtract 7
 - Add 4, 5, 6...
 - Multiply by 3
 - Divide by 2
 - Add 6, subtract 3
- 40, 48, 56
 - 43, 36, 30
 - 36, 49, 64
 - 70, 110, 100
 - 43, 57, 73
 - 40, 43, 36

21. Length

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Talk About

- Teacher check

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- 135cm
 - 2m 43cm
 - 375cm
 - 2m 17cm
 - 5.91m
 - 3.05m
 - 1m 9cm
 - 7.3m
- 1234m
 - $\frac{1}{1000}$
 - $1\frac{234}{1000}$ km, 1.234km
- 3km 984m
 - 1.098km
 - 1238m
 - 0.435km
 - 2.132km
 - 8.019km
 - 6km 900m
 - 10.073km

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Adding and Subtracting Metres and Centimetres

- 8.83m
 - 20.93m
 - 13.04m
 - 7.63m
 - 9.41m
 - 4.76m
 - 18.14m
 - 19.87m
- 92cm
- 5.79m
 - 2.58m
 - 5.57m
 - 1.09m
 - 0.67m
 - 4.78m
 - 1.36m
 - 3.79m

Adding and Subtracting Kilometres and Metres

- 9.37km
 - 15.587km
 - 16.094km
 - 11.057km
 - 7.392km
 - 1.468km
 - 6.657km
 - 2.617km

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- 639m
- 3.705km
- 3.98m
- 5.63m

Write cm as mm and Vice Versa

- Teacher check

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- Teacher check
- Teacher check
- 1cm 3mm
 - 5.3cm
 - 81mm
 - 38mm
 - 10cm 4mm
 - 12.5cm
 - 93mm
 - 5cm 5mm
 - 8.6cm
- 12cm
 - 23.8cm
 - 32cm
 - 16.8cm
 - 3.4cm
 - 6.5cm
 - 3.4cm
 - 1.7cm



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6. a) 6.2cm b) 19.1cm
c) 4.7cm d) 20.8cm

Multiplying and Dividing Lengths

1. €21.84
2. a) 34.16m b) 12.54m
c) 51.66m d) 15.21km
e) 36.584km f) 49.371km
g) 46.8cm h) 23.7cm
i) 52.8cm

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3. a) 3.9cm b) 0.293km
c) 1.68m d) 0.42m
e) 6.3m f) 0.795km
g) 0.823km h) 1.18m
i) 4.7cm
4. 205.6cm
5. 686m
6. 13.79m

Estimate Length and Choose Appropriate Units of Measurement

7. Teacher check

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8. Teacher check

Perimeter

1. 31cm
2. Teacher check
3. a) 15mm b) 17km
c) 212cm d) 93cm

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4. a) 148mm b) 196m
c) 536cm d) 1460km
e) 12.16m f) 20.152km
5. a) 11.1cm b) 14.79m
c) 5.055km d) 1647mm
e) 9.75m f) 9.546km
6. a) 148cm b) 256mm
c) 380m d) 28cm
e) 3.74m f) 9.956km
7. Farmer Joan
8. 9mm

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9. 110m

Homework

1. a) 187cm b) 2m 9cm
c) 345cm d) 5m 3cm
e) 2km 96m f) 8752m
g) 1280m h) 0.984km
2. a) 6.77m b) 13.33m
c) 9.96m d) 14.23m
e) 16.58m f) 7.38m
3. a) 2.54m b) 2.54m
c) 3.46m d) 1.28m
e) 1.39m f) 1.84m
4. a) 11.021km b) 11.695km
c) 15.259km d) 7.112km
e) 2.505km f) 2.207km
g) 8.497km h) 1.946km

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5. a) 1cm 9mm b) 3.9cm
c) 54mm d) 62mm
e) 11cm 7mm f) 15.7cm
6. a) 9.7cm b) 20.3cm
c) 33.2cm d) 15.7cm
e) 3.2cm f) 2.7cm
g) 3.7cm h) 0.9cm
7. a) 50.33m b) 16.74m
c) 29.04m d) 40.624km
e) 90.255km f) 27.46km
8. a) 3.9cm b) 0.268km
c) 4.63m d) 3.17m
e) 7.9cm f) 0.168km
9. a) 128cm b) 214mm
c) 366m d) 21.8cm
e) 5.7m f) 13.726km

22. 3-D Shapes

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Puzzler: Depth

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Talk About

1. Cube
2. 6
3. Teacher check
4. a) To make them easier to roll
b) 8
5. The opposite faces add up to 7
6. 12
7. A cuboid has some rectangular faces

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8.

	Cube	Cuboid	Cylinder	Pyramid	Sphere	Cone	Triangular Prism
Number of faces	6	6	3	5	0	2	4
Number of edges	12	12	0	8	0	0	9
Number of corners	8	8	0	5	0	0	6
All the faces are flat	Yes	Yes	No	Yes	No	No	Yes
There are no flat faces	No	No	No	No	Yes	No	No

9. a) Triangle and square b) They have curved surfaces c) 4
10. Teacher check

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11. Teacher check
12. Teacher check
13. a) Cone and cylinder (or hexagonal prism)
b) Cuboid and pyramid
14. Teacher check

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15. a) Yes b) No c) No d) No e) Yes
16. a) Pyramid
b) Triangular prism

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17. a) 4 faces b) 6 edges
c) 4 vertices
Yes, a tetrahedron is a regular polyhedron because all sides are the same
18. a) Cylinder
b) Teacher check
c) No
19. a) False b) False c) True d) False e) True f) True
g) True h) False
20. Teacher check

Homework

1. Teacher check
2. a) Cylinder b) Cuboid
c) Pyramid d) Cube

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3. Teacher check
4.

Shape	Yes	No
Cuboid		X
Pyramid		X
Cube	X	
Cylinder		X
Tetrahedron	X	
Triangular prism		X

23. Percentages

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Write Fractions and Decimals as Percentages

1. a) $0.55 = 55\%$ b) $0.89 = 89\%$
2. a) 22% b) 7% c) 99% d) 51% e) 30% f) 1%
g) 84% h) 62% i) 9% j) 76% k) 100% l) 13%

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3. a) Red = 30%, Blue = 40%, White = 30%
b) Red = 11%, Blue = 61%, White = 28%
c) Red = 6%, Blue = 46%, White = 48%

Write Percentages as Fractions and Decimals

4. a) $\frac{35}{100}$ b) $\frac{2}{100}$ c) $\frac{77}{100}$
d) $\frac{23}{100}$ e) $\frac{90}{100}$ f) $\frac{16}{100}$
g) $\frac{81}{100}$ h) $\frac{49}{100}$ i) $\frac{8}{100}$
j) $\frac{10}{100}$ k) $\frac{66}{100}$ l) $\frac{50}{100}$

5. Teacher check

Find a Percentage of a Number

6. a) 68% b) 32%
7. a) 23% b) 77%

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Calculate Percentages

1. a) 20% b) 30% c) 75%
d) 70% e) 50% f) 90%
g) 25% h) 80% i) 60%
2. a) $\frac{7}{10}$ b) $\frac{1}{4}$ c) $\frac{1}{2}$
d) $\frac{1}{5}$ e) $\frac{19}{20}$ f) $\frac{31}{50}$
g) $\frac{4}{5}$ h) $\frac{1}{50}$ i) $\frac{3}{4}$
3. a) 68% b) 33% c) 5%
d) 99% e) 18% f) 42%
g) 27% h) 6% i) 71%
4. a) 70% b) 10% c) 30%
d) 50% e) 20% f) 80%
g) 90% h) 40% i) 60%

- 5.

Decimal	Fraction	Percentage
0.92	$\frac{47}{50}$	92%
0.1	$\frac{1}{10}$	10%
0.3	$\frac{3}{10}$	30%
0.06	$\frac{3}{50}$	6%
0.75	$\frac{3}{4}$	75%
0.17	$\frac{17}{100}$	17%
0.5	$\frac{1}{2}$	50%
1.0	1	100%
0.4	$\frac{2}{5}$	40%
0.48	$\frac{12}{25}$	48%

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6. Teacher check
7. a) 55% b) 2% c) 70%
8. a) $0.375 = 37\frac{1}{2}\%$
b) $0.666 = 66\frac{2}{3}\%$
c) $0.625 = 62\frac{1}{2}\%$
d) $0.875 = 87\frac{1}{2}\%$
9. a) 80 b) 100 c) 45
d) 70 e) 20 f) 9

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10. a) 8 b) 4
11.

	100	200	60	20
100%	100	200	60	20
50%	50	100	30	10
25%	25	50	15	5
20%	20	40	12	4
10%	10	20	6	2

Calculate Percentage Increases

Puzzler: €12.75

12. a) 15 b) 30 c) 18
13. a) 42 b) 32 c) 20
d) 42 e) 36 f) 585
g) 14 h) 70 i) 18
j) 32 k) 15 l) 77

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14. 54
15. €0.54
16. 3
17. 49
18. Toyota = 38, Mazda = 19,
Fiat = 95, Nissan = 19,
Ford = 152, Peugeot = 57

Estimate

1. Teacher check
2. Teacher check

Percentage Recipes

3. Margarine = 80g
Self-raising flour = 180g
Caster sugar = 100g
Chocolate chips = 40g

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4. Orange = 300ml
Lemon = 150ml
Lime = 50ml
5. Teacher check
Percentage Power
6. a) 50 b) 40
7. Teacher check
8. a) 832 b) 1323 c) 7
d) 304 e) 68 f) 389.5
g) 135 h) 1802 i) 26
j) 27.6 k) 259.2 l) 1131

Calculating Percentage Discounts

1. a) €20 b) €51 c) €45.50
d) €60 e) €67.95

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2. Oranges = €1.20
Apples = €1.05
Pears = €1.65
Bananas = €2.40
Grapes = €1.80
Tomatoes = €0.90
Onions = €0.96
Carrots = €0.75
Cabbages = €0.69
3. €413
4. a) €336 b) €20.40
c) €103.20 d) €24.48
e) €1960 f) €79.92
g) €628.16 h) 460.08
i) €7.04
5. a) €13750 b) €15675
c) €16500 d) €27610
e) €32890

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6. a) €7.14 b) €9.87
c) €12.81 d) €4.83
e) €5.46 f) €7.77
7. a) €435 b) €15.60
c) €3547.50 d) €51.75
e) €1392 f) €117.24
g) €8535.15 h) €181.20
i) €9.60
8. a) 175m b) 28cm
c) 427m d) 7cm
e) 57.4cm f) 182.7m
g) 22.4m h) 1330m
i) 70cm

9. a) 600ml b) 480g c) 288g
d) 144ml e) 432g
10. €5.40

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11. €1530
12. Stereo = €768.90
TV = €562.50
DVD = €320
MP3 player = €37.59
Camcorder = €1189
Digital camera = €1235

Homework

1. a) 8% b) 17% c) 76%
d) 39% e) 4% f) 53%
g) 92% h) 68% i) 3%
2. a) $\frac{71}{100}$ b) $\frac{29}{100}$ c) $\frac{7}{100}$
d) $\frac{14}{100}$ e) $\frac{84}{100}$ f) $\frac{36}{100}$
g) $\frac{93}{100}$ h) $\frac{55}{100}$ i) $\frac{48}{100}$
3. a) 19% b) 41% c) 35%
d) 25% e) 89% f) 84%
g) 76% h) 66% i) 97%
4. a) €47 b) €39 c) €0.84
d) €55 e) €3.16 f) €726
5. a) 315 b) 78 c) 387
d) 19 e) 69 f) 39

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6. a) 702 b) 553.50 c) 86
d) 6142 e) 1888 f) 2552
7. Shoes = €76
MP3 player = €42
Laptop = €441
Jeans = €32
Tennis racket = €51
Bike = €168
8. Book = €9.87
Scooter = €169
TV = €410
Coat = €104.50
Printer = €112
Games console = €198

25. Directed Numbers

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Thermometers

- 10°C
 - Teacher check
 - Teacher check
 - 0°C, boiling
 - Above freezing = +5°C, +10°C, +8°C, +7°C
Below freezing = -3°C, -6°C, -2°C
 - Teacher check
 - Teacher check
- Teacher check
- 9°C
 - 10°C
 - 2°C
 - 12°C
 - 7°C
 - 11°C
 - 0°C
 - 1°C
- 2°C
 - 1°C
 - 3°C
 - 0°C
 - 3°C
 - 5°C
 - 7°C
 - 8°C

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- Teacher check
- 8°C, -5°C, -2°C, 6°C, 13°C, 15°C, 22°C, 25°C
- 33°C
- Oslo
 - Las Palmas
 - 26°C
 - Teacher check
 - Teacher check
 - Teacher check

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- Teacher check
- +9
 - +13
 - 4
 - +20
 - 10
 - 8
 - +3
 - 15

Puzzler: 23 days. It would never get out.

- 6°C
 - +2
 - 100m
 - 18°C
 - +200m
 - 25
 - +5 points

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Puzzler: When the number you are subtracting is bigger than the number from which you are subtracting.

12.

	Positive/ Negative Number
A plane flying at 9000m above sea level	+9000m
A diver diving 10m below sea level	-10m
A submarine travelling 350m below seal level	-350m
Mountain peak at 1260m above sea level	+1260m
A glider gliding at an altitude of 550m	+550m
A shipwreck 12m below sea level	-12m
Standing on a roof of a tall building	+80m
A hot air balloon travelling at an altitude of 300m	+300m

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Money

- €3, €3
 - €3, €3
 - Teacher check
- She owes €2
- | | |
|----------|----|
| Appledy | +3 |
| Ellis | -5 |
| Wood | -1 |
| Harring | +1 |
| Evan | +4 |
| O'Malley | +2 |
| McCarron | -2 |
| Dorman | -3 |
- 5
 - 9
 - 1
 - 4
 - Ellis

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- Goal difference:
Panthers = +3,
Tigers = -3,
Gazelles = -4
b) Tigers and Gazelles
c) Lions d) 1 e) 1
f) 8 g) Lions
h) Teacher check

Homework

- +26°C
 - 12m
 - €15
 - 1
 - +1000m
- 8 °C
- €5

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- 68
- Teacher check
- Teacher check

26. Weight

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Instruments to Use When Weighing

- Teacher check
- Teacher check
- Teacher check

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Units of Measurement

- Teacher check
- 2.5kg, 1kg, 600g, 400g, 300g
- 2000g
 - 500g
 - 250g
 - 750g
 - 235g
 - 3500g
- 1kg
 - 400g
 - 1g
 - 5kg
 - 25kg
 - 10kg
 - 150g
- Teacher check
- 350g
 - 40kg
 - 250g
 - 160g

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7.

g	kg g	kg
1780g	1kg 780g	1.78kg
8706g	8kg 706g	8.706kg
4952g	4kg 952g	4.952kg
2043g	2kg 43g	2.043kg
7009g	7kg 9g	7.009kg
5380g	5kg 380g	5.38kg
9025g	9kg 25g	9.025kg
3700g	3kg 700g	3.7kg
1007g	1kg 7g	1.007kg

- 920kg
 - 25kg
 - 7kg
 - 3kg
 - 1kg

Adding Weights

- 10235g
 - 10kg 235g
 - 10.235kg
- 4.986kg
 - 7.16kg
 - 9.688kg
 - 12.935kg
 - 12.856kg
 - 11.27kg

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3. a) 275g, 1100g, 200g, 10g, 300g, 75g
b) 1.4kg c) 75g d) 125g
e) 1.96kg f) A scale

Subtracting Weights

4. a) 1.45kg b) 3.299kg
c) 7.41kg d) 3.714kg
e) 8.1kg f) 6.155kg
5. 515g
6. 39.886kg
7. 13.8kg

Puzzler: 47kg**Page 186****Multiplying Weights**

1. a) 14.025kg b) 26.745kg
c) 44.4kg d) 31.23kg
e) 33kg f) 58.824kg
g) 127.08kg h) 291.25kg
i) 139.65kg
2. 44.45kg
3. 44.3kg

Dividing Weights

4. a) 2.397kg b) 1.379kg
c) 0.829kg d) 1.62kg
e) 4.56kg f) 1.642kg
g) 4.2kg h) 0.096kg
i) 0.058kg
5. 25
6. 50

Page 187**Homework**

1. a) 4000g b) 1500g c) 3750g
d) 17g e) 391g f) 8705g
2. a) 3kg 986g, 3.986kg
b) 1kg 70g, 1.07kg
c) 0kg 836g, 0.836kg
d) 9kg 281g, 9.281kg
e) 0kg 65g, 0.065kg
f) 2kg 540g, 2.54kg
3. a) 14.507kg b) 17.324kg
c) 15.9kg d) 18.775kg
4. a) 2.632kg b) 3.003kg
c) 3.077kg d) 5.872kg
5. a) 22.701kg b) 37.77kg
c) 65.664kg d) 116.28kg
e) 236.04kg f) 65.392kg
6. a) 0.729kg b) 0.966kg
c) 1.568kg d) 0.36kg
e) 0.085kg f) 0.079kg

27. Representing and Interpreting Data**Page 189****Pictograms**

1. a) Reading b) 56
c) Television d) 12
e) 10 f) Sport
g) Teacher check
h) Teacher check
2. Teacher check

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3. Teacher check

Bar Charts

4. a) 60 b) Blue
c) Orange d) 4
e) 14 f) 20%
g) Teacher check
h) Teacher check
5. Teacher check
6. Teacher check

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7. Teacher check
8. Teacher check
9. Teacher check
10. Teacher check
11. a) Because the information is represented by bars
b) 4

Page 192**Multiple Bar Charts**

12. a) Tuesday, Wednesday and Friday
b) Monday and Thursday
c) Friday
d) 137
e) Teacher check

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13. Teacher check
14. Teacher check

Pie Charts

1. a) 10 b) 20 c) 10
2. a) 180° b) 45° c) 270°
d) 36°
3. a) 90° b) 180° c) 270°
d) 45°

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4. a) $\frac{1}{2}$ b) $\frac{1}{4}$ c) $\frac{1}{6}$ d) $\frac{1}{30}$

5. a) $A = \frac{1}{2}$ $B = \frac{1}{4}$
 $C = \frac{1}{8}$ $D = \frac{1}{8}$
b) $A = 40$ $B = 20$
 $C = 10$ $D = 10$

6. Cinema = €5 Book = €8
Comic = €4 Sweets = €3

7. a) 100 b) Silver c) Green
d) 12% e) 15%
f) Green = 36°
Yellow = 54°
Black = 72°
Silver = 90°
Red = 43.2°
Blue = 64.8°

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8. Teacher check
9. Teacher check
10. Teacher check
11. Teacher check

Page 196**Data Sets**

1. Teacher check
2. Teacher check
3. Teacher check

Page 197**Homework**

1. Teacher check
2. Teacher check
3. Apple = 60
Orange = 30
Grapes = 20
Kiwi = 10
4. Teacher check

28. Area 1**Page 199****Talk About**

1. a) 400cm² b) 522cm²
c) 768m² d) 459m²
e) 1085cm² f) 1632m²
2. a) 529cm² b) 1521m²
c) 196cm² d) 1369cm²
e) 361m² f) 1849m²
3. a) 18cm² b) 36cm²
c) 14cm² d) 60cm²
e) 56cm² f) 90cm²

Page 200**Puzzler: 1600m²**

Homework

- Teacher check
- a) 104cm^2 b) 192cm^2
c) 450cm^2 d) 459cm^2
e) 792cm^2 f) 1862cm^2
- a) 35cm^2 b) 36cm^2
c) 36cm^2
- a) 64cm^2 b) 25cm^2
c) 121cm^2

29. Capacity

Page 201

Units That Measure Capacity

- a) Litre b) Millilitre
- Teacher check
- a) 5l b) 240ml
c) 15ml d) 7l

Page 202

- Teacher check
- a) 500ml b) 250ml c) 750ml
- 50ml, 200ml, 330ml, 500ml, 1l, 2.5l
-

ml	l ml	l
1345ml	1l 345ml	1.345l
4271ml	4l 271ml	4.271l
3506ml	3l 506ml	3.506l
1002ml	1l 2ml	1.002l
3920ml	3l 920ml	3.92l
5065ml	5l 65ml	5.065l
2305ml	2l 305ml	2.305l
2400ml	2l 400ml	2.4l
6700ml	6l 700ml	6.7l

- Teacher check

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- a) 500ml b) 300ml c) 900ml
d) 600ml e) 100ml
- Teacher check
- Teacher check
- a) 1249ml b) 2692ml
c) 4080ml d) 3005ml
e) 4075ml f) 1500ml
g) 2600ml h) 3150ml
i) 9080ml
- Teacher check
- a) 250ml b) 40l c) 200l
d) 750ml e) 10l f) 5ml
- a) l b) ml c) ml d) l
e) ml f) ml g) l h) l

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Puzzler:

- Fill the 3-litre jug and pour it into the empty 5-litre jug.
- Fill the 3-litre jug again and pour in enough to fill the 5-litre jug. This leaves exactly 1 litre in the 3-litre jug.
- Empty the 5-litre jug. Pour the remaining 1 litre from the 3-litre jug into the 5-litre jug.
- Fill the 3-litre jug and pour it into the 5-litre jug. The 5-litre jug now has exactly 4 litres.

Adding Capacity

- a) 6.902l b) 6.5l c) 8.857l
d) 14.53l e) 6.147l f) 9.07l

Subtracting Capacity

- a) 3.4l b) 463l c) 2.682l
d) 0.41l e) 1.642l f) 1.38l
- a) 0.5l b) 600ml c) 250ml
d) 3504ml e) 12.62l f) 400ml
g) 4.008l h) 45ml

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- a) 92.705l b) 80.8l
c) 4.747l d) 15.876l

Multiplying Capacity

- a) 22.95l b) 18.135l
c) 94.5l d) 11.682l
e) 23.12l f) 54.39l
g) 91.8l h) 120l
i) 153.368l
- 8 bottles
- 226.25l
- 357km

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Dividing Capacity

- a) 0.892l b) 1.87l c) 0.779l
d) 1.505l e) 6.695l f) 1.25l
g) 1.864l h) 2.36l i) 1.703l
- 10 days
- 65 glasses

Homework

- Teacher check
- a) 4l 98ml b) 2l 675ml
c) 1l 90ml d) 3l 860ml
e) 7l 632ml f) 2l 400ml
g) 5l 5ml h) 7l 34ml
i) 97ml

- a) 1637ml b) 2009ml
c) 7430ml d) 8008ml
e) 4916ml f) 1850ml
g) 3900ml h) 85ml
i) 7332ml

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- a) 1.163l b) 2.47l
c) 3.007l d) 8.095l
e) 0.367l f) 0.005l
- a) 9.667l b) 12.896l
c) 20.094l d) 11.968l
e) 20.105l f) 10.467l
- a) 3.265l b) 3.644l
c) 1.018l d) 4.434l
e) 1.858l f) 3.851l
- a) 57.16l b) 25.281l
c) 56.588l d) 31.245l
e) 63.963l f) 108.596l
- a) 0.254l b) 1.473l
c) 0.529l d) 0.96l
e) 0.067l f) 0.042l

30. Averages

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Calculate Averages

- a) Friday b) 2 c) 2
- a) 15 b) 46c c) 81g
d) 5 e) 13cm f) 17
g) 1450 h) 102km i) 6
- 52
- a) 22°C , 15°C b) 7°C
c) Mon and Thurs d) 18°C
e) Sat and Sun f) Mon
g) 5 hours h) 7 hours

Page 210

- a) 25km b) 31km
c) Yes – Sinead
d) Bridget, Damien and Brian
e) Carla

Puzzler: No

- Teacher check
- 1500km
- Dublin City – 3
Wexford Wanderers – 1
Roscommon Rovers – 2

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- a) 1100 b) 275
c) €118.50
d) Fast-Jet and Sky
e) €33165, €35000,
€43400, €19250
f) €32703.25

Puzzler: 93

Page 212**Homework**

- a) 20 b) 101 c) €1.51
d) 57m e) 2.6 f) 73
- a) 24 b) 1 above 2 below
c) 26
- a) 2697 b) €19970

31. Area 2**Page 213****Area of Rectangles**

- a) 12cm^2 b) 10cm^2
c) 30cm^2 d) 7cm^2
e) 36cm^2 f) 24cm^2

Page 214**Puzzler: 16 times****Units of Measurement**

- Teacher check
- Teacher check

Page 215**Calculate Missing Dimensions**

- Teacher check

Page 216

- a) 17cm b) 26cm c) 27cm d) 39cm e) 15cm f) 18cm
-

Garden	Length	Width	Area
1	34m	27m	918m^2
2	18m	11m	198m^2
3	6m	18m	108m^2
4	19m	28m	532m^2
5	26m	13m	338m^2
6	46m	75m	3450m^2
7	26m	36m	936m^2

- Bedroom 1
- No – carpet would cost €202.80
- a) 2304cm^2 b) 5.7m
- 126m^2

Page 217**Homework**

- a) 12cm^2 b) 10cm^2 c) 20cm^2 d) 30cm^2 e) 32cm^2
- Teacher check

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- a) 14cm^2 b) 14cm^2
-

Book	Length	Width	Area
1	25cm	16cm	400cm^2
2	29cm	18cm	522cm^2
3	19cm	23cm	437cm^2
4	35cm	26cm	910cm^2
5	27cm	37cm	999cm^2
6	34cm	21cm	714cm^2
7	28cm	36cm	1008cm^2

Check-up Units Answers

9. Check-up 1

1. 25406
2. Teacher check
3. Teacher check
4. a) 80 b) 8 c) 800
d) 8000 e) 8 f) 80000
g) 80 h) 800 i) 80000
j) 80 k) Teacher check
5. a) 9 b) 5 c) 7
d) 8 e) 2
6. 9041 9014 9104
9140 9401 9410
4901 4910 4190
4109 4091 4019
1409 1490 1904
1940 1094 1049
0149 0194 0491
0419 0914 0941
7. a) 98310, 01389
b) 77642, 24677
c) 98510, 01589
d) 65432, 23456
e) 65520, 02556
f) 97432, 23479
8. a) 79960 b) 80050
c) 78950
9. a) 1270, 1370, 1470, 1570,
1670, 1770, 1870, 1970
b) 3450, 3350, 3250, 3150,
3050, 2950, 2850, 2750,
2650
c) 5680, 5690, 5700, 5710,
5720, 5730, 5740, 5750,
5760
d) 7815, 6815, 5815, 4815,
3815, 2815, 1815, 815
e) 2340, 3340, 4340, 5340,
6340, 7340, 8340, 9340,
10340
f) 21300, 22300, 23300,
24300, 25300, 26300, 27300
10. Teacher check
11. a) 80 b) 1 c) $\frac{2}{10}$
d) 300 e) $\frac{9}{100}$ f) 80
g) $\frac{2}{10}$ h) 7 i) 500
j) $\frac{7}{100}$
12. a) 2.5, 2.43, 2.41, 2.4, 2.34,
2.14
b) 22.9, 22.6, 22.5, 22.3,
22.1, 22

- c) 38.12, 37.92, 37.91,
37.81, 37.65
d) 349.1, 348.8, 348.6,
348.2, 348.1
e) 403.1, 402.6, 402.3,
402.15, 402.1
f) 624.8, 623.9, 623.78,
623.68, 623.11
13. Teacher check
14. a) 180 b) 4260 c) 1240
d) 17430 e) 22470
15. a) 600 b) 1000 c) 3600
d) 37000 e) 41000
16. a) 3000 b) 9000 c) 18000
d) 21000 e) 40000
17. Estimate = €10
- Puzzler: A = 3, B = 1, C = 2**
18. a) 12755 b) 24274 c) 38471
d) 37119 e) 38666 f) 50376
g) 1893 h) 10991 i) 23030
j) 29992
19. 27264
20. 4402
21. a) 4026 b) 4408 c) 4683
d) 3109 e) 9008 f) 7677
g) 8009 h) 4876 i) 8527
22. 646 pages
23. 17, 2, 41
24. 24, 9, 49, 63
25. a) 1, 2, 4, 8, 16
b) 1, 2, 3, 6, 9, 18
c) 1, 2, 4, 7, 14, 28
d) 1, 2, 3, 5, 6, 10, 15, 30
e) 1, 2, 3, 4, 6, 9, 12, 18, 36
f) 1, 2, 3, 6, 7, 14, 21, 42
26. a) No b) Yes c) Yes
d) No e) Yes f) No
27. a) 1, 2, 4 b) 1, 2, 4, 8
c) 1, 3, 9 d) 1, 3, 9
e) 1, 5 f) 1, 2, 3, 4, 6, 12
28. a) 5, 10, 15, 20, 25, 30
b) 9, 18, 27, 36, 45, 54
c) 12, 24, 36, 48, 60, 72
d) 7, 14, 21, 28, 35, 42
e) 16, 32, 48, 64, 80, 96
f) 27, 54, 81, 108, 135, 162
29. a) Yes b) No c) Yes
d) Yes e) Yes f) No
30. a) 7 hrs 49 mins
b) 8 hrs 13 mins
c) 13 hrs 34 mins
d) 14 hrs 31 mins
31. a) 11:32am b) 1:23pm

- c) 3:16pm d) 5:38pm
e) 6:56pm f) 9:35pm
g) 11:13pm h) 1:24am
32. 8 hrs 3 mins
33. a) 5 mins 22 secs
b) 4 mins 47 secs
c) 28 secs
d) 6 mins 54 secs
34. 29 secs
35. a) 5:46am b) 8:49am
c) 12:14pm d) 1:40pm
e) 2:30pm f) 4:57pm
g) 6:32pm h) 8:19pm
38. a) Acute b) Straight
c) Reflex d) Acute
e) Obtuse f) Full rotation
g) Right h) Acute
39. degrees
40. a) 180° b) 90°
c) 120° d) 90°
41. Teacher check
42. a) 42 - 35 = 7
b) €3.35 ÷ 5 = €0.67
c) 6:10pm + 2 hrs 20 mins =
8:30pm
d) €6.00 x 7 = €42.00
43. a) $\frac{2}{4}, \frac{1}{2}$ b) $\frac{6}{8}, \frac{3}{4}$ c) $\frac{3}{9}, \frac{1}{3}$
44. a) False b) True c) True
d) False e) False f) True
45. Teacher check
46. a) $\frac{3}{12}$ b) $\frac{8}{12}$ c) $\frac{15}{18}$
d) $\frac{9}{18}$ e) $\frac{24}{42}$ f) $\frac{63}{90}$
g) $\frac{2}{3}$ h) $\frac{3}{5}$ i) $\frac{5}{9}$
j) $\frac{4}{7}$ k) $\frac{7}{8}$ l) $\frac{7}{11}$

17. Check-up 2

1. Teacher check
2. Equilateral triangle, Isosceles triangle, Scalene triangle
3. Quadrilateral
4. Trapezium
5. Triangle (isosceles)
6. a) Semi-circle, square, rectangle
b) Teacher check
c) Teacher check
7. a) 1976 b) 3572 c) 7512
d) 8608 e) 7174 f) 12528
8. 30208 pages

9. €251.64
 10. a) 8 R 16 b) 55
 c) 37 R 15 d) 53 R 6
 e) 48 R 24
 11. a) 23 b) 37 c) 42
 12. 19 R 16
 13. €19
 14. Teacher check
 15. Because it is the first square number
 16. 1, 4, 9, 16, 25, 36
 17. a) 9 b) 25 c) 49
 d) 144 e) 100 f) 196
 18. a) $\frac{3}{10}$ b) $\frac{7}{8}$ c) $\frac{19}{24}$
 d) $\frac{22}{15}$ or $1\frac{7}{15}$ e) $\frac{67}{72}$
 f) $\frac{33}{20}$ or $1\frac{13}{20}$
 19. $13\frac{13}{24}$ km
 20. a) $\frac{3}{5}$ b) $\frac{5}{8}$ c) $\frac{5}{9}$
 d) $\frac{1}{7}$ e) $\frac{3}{10}$ f) $\frac{7}{12}$
 21. a) $\frac{1}{12}$ b) $\frac{7}{18}$ c) $\frac{1}{10}$
 d) $\frac{19}{36}$ e) $\frac{31}{60}$ f) $\frac{5}{24}$
 22. $5\frac{5}{36}$ l
 23. a) 1 in 2 b) 1 in 4 c) 1 in 2
 24. a) 1 in 4 b) 1 in 2 c) 1 in 2
 d) 1 in 10 chance (not in school for July and August)
 e) 1 in number of children in the class
 25. a) 15 in 40 or 3 in 8
 b) 5 in 40 or 1 in 8
 c) 20 in 40 or 1 in 2
 26. a) $2\frac{1}{8}$ = Leo
 b) $3\frac{5}{6}$ = Laura
 c) $6\frac{5}{10}$ = Sam
 d) $6\frac{7}{12}$ = Julian
 e) $5\frac{13}{24}$ = Linda
 f) $10\frac{7}{18}$ = Ruth
 27. a) $2\frac{5}{12}$ m b) $2\frac{5}{10}$ m
 c) $4\frac{22}{30}$ m d) $3\frac{5}{8}$ m
 e) $4\frac{9}{12}$ m f) $3\frac{13}{24}$ m
 28. $1\frac{13}{15}$ km

29. Teacher check
 30. Teacher check
 31. a) True b) False
 c) False d) True
 e) 1 = radius, 2 = diameter,
 3 = circumference

24. Check-up 3

1. a) €0.63 b) €0.21 c) €1.45
 d) €0.07 e) €0.09 f) €2.65
 2. a) 0.127 b) 0.783 c) 0.329
 d) 0.281 e) 0.052 f) 0.674
 3. a) 6.2, 6.3, 6.4, 6.5, 6.6, 6.7,
 6.8, 6.9, 7.0
 b) 2.463, 2.464, 2.465,
 2.466, 2.467, 2.468
 c) 8.49, 8.48, 8.47, 8.46,
 8.45, 8.44, 8.43, 8.42
 4. a) €1.02 b) €0.73 c) €1.08
 d) 5 e) Teacher check
 5.

Fraction	Decimal
$\frac{1}{10}$	0.1
$\frac{3}{10}$	0.3
$\frac{7}{10}$	0.7
$\frac{9}{10}$	0.9
$\frac{1}{5}$	0.2
$\frac{2}{5}$	0.4
$\frac{3}{5}$	0.6
$\frac{4}{5}$	0.8
$\frac{1}{2}$	0.5
$\frac{1}{4}$	0.25
$\frac{1}{4}$	0.75
$\frac{1}{8}$	0.125
$\frac{3}{8}$	0.375
$\frac{5}{8}$	0.625
$\frac{7}{8}$	0.875

6. a) 31.258 b) 89.622
 c) 79.592 d) 133.784
 e) 1050.42 f) 791.052
 g) 1.29 h) 5.4
 i) 7.8
 7. a) 0.89m b) 125m c) 0.9m
 8. a) 211.5 b) 3695 c) 8627
 d) 4.72 e) 7.983 f) 1.24

9. a) 89 b) 151 c) 67
 d) 18 e) 19 f) 42
 g) 8 h) 8 i) 42
 j) 9 k) 162 l) 3
 10. a) 3798 b) 12852
 c) 10371 d) 6822
 e) 3062 f) 18486
 11. a) Add 6 b) Subtract 11
 c) Add 5, subtract 3, repeat
 d) Subtract 8, add 6, repeat
 e) The square numbers
 f) Add 1, then 2, then 3...
 g) Teacher check
 12. a) 38, 29, 20 b) 57, 70, 83
 c) 48, 96, 192 d) 23, 18, 28
 e) 35, 42, 49 f) 27, 35, 44
 13. Teacher check
 14. a) 0.25m b) 4.7cm
 c) 2086m d) 10.5cm
 e) 206cm f) 753m
 g) 325cm h) 5125m
 i) 48mm
 15. 40.841km
 16. 18.294km
 17. 3.5m
 18. 1.02m
 19. a) 62m b) 56m c) 78m
 20. Rectangle 1: 29cm, 23cm,
 104cm
 Rectangle 2: 80m, 58m,
 276m
 Rectangle 3: 44km, 37km,
 162km
 Rectangle 4: 273mm, 93mm,
 732mm
Puzzler: Teacher check
 21. Cube, tetrahedron
 22. Teacher check
 23. Teacher check
 24. a) $\frac{27}{100}$ b) $\frac{81}{100}$ c) $\frac{9}{100}$
 d) $\frac{54}{100}$ e) $\frac{35}{100}$ f) $\frac{62}{100}$
 25. €3.75
 26. a) 210 b) 70
 27. Lord of the Rings = €11.97
 Shrek 4 = €9.30
 Star Wars Trilogy = €27.30
 James Bond 007 = €7.20
 28. €275,000
 29. a) €30 b) €28 c) €10
 d) €56 e) €124

32. Check-up 4

1. Teacher check
2. a) 10°C b) 5°C
c) 1°C d) 6°C
3. a) 0°C b) -2°C
c) -8°C d) 0°C
4. Rory McIlroy: 264,
Jason Day: 272,
Kevin Chappell: 274
5. Teacher check
6. a) 0, -10, -20, -30
b) 0, -2, -4, -6
c) -6, -13, -20, -27
d) 8, -9, -26, -43
e) -4, -2, 0, 2
f) 7, 19, 31, 43
7. 10000m
8. -700m
9. €27
10. 1485ml
11. a) €1602 b) €3175
c) €5008 d) €796
e) €942 f) €670

12. a) $\frac{7}{20}$ b) $\frac{3}{5}$ c) $\frac{5}{8}$ d) $\frac{4}{5}$
13. a) cm^2 b) m^2 c) m^2
d) cm^2
14. a) 112cm^2 b) 135cm^2
c) 169cm^2
15. m^2
16. Rectangle 1: 34cm, 28cm,
 952cm^2
Rectangle 2: 15cm, 7cm,
 105cm^2
Rectangle 3: 24cm, 19cm,
 456cm^2
17. a) 350g b) 950kg
c) 30kg d) 20g
18. a) 4kg 283g b) 1kg 609g
c) 3kg 251g d) 2kg 764g
e) 4kg 78g f) 9kg 210g
19. a) 4.986kg b) 7.16kg
c) 5.899kg d) 5.884kg
e) 25.638kg f) 23.205kg
g) 3.905kg h) 2.6kg
20. 2.1kg

21. a) Teacher check b) 38kg
22. a) Teacher check b) Soccer
c) Other
23. a) Fantasy b) 60
c) 14 d) 24
e) Teacher check
24. Teacher check
25. a) 8 b) 53c c) 78g
d) 50 e) 6mm f) 192
26. a) Mark = €4.20, Alex =
€3.10, Laoise = €2.60,
Sean = €2.45,
Claire = €1.90
b) €2.85

Enrichment Book Answers

Note: Teacher's Notes and Support Sheets for the Investigations are available on the *Cracking Maths* website, www.crackingmaths.ie

2. Place Value

Practise!

- Teacher check
- a) 900 b) 30 c) 6000
d) 4 e) 10000 f) 60
g) 1000 h) 700 i) 20000
j) 6 k) 8000 l) 90
m) 300 n) 70000 o) 1
- Teacher check
- a) 130, 180, 230, 280, 330,
380, 430
b) 560, 535, 510, 485, 460,
435, 410, 385, 360
c) 315, 360, 405, 450, 495,
540, 585, 630
d) 830, 800, 760, 710, 650,
580, 500, 410, 310
- a) 1400, 140 b) 960, 96
c) 1710, 171 d) 2170, 217
e) 530, 53 f) 2850, 285
g) 190, 19 h) 1390, 139
i) 400, 40 j) 6870, 687
- Teacher check
- a) 7 b) $\frac{3}{10}$ c) 100 d) $\frac{7}{100}$
e) 20 f) $\frac{5}{10}$ g) 4 h) 20
i) $\frac{6}{100}$ j) 500
- a) 10 b) 10 c) 50
d) 90 e) 100 f) 110
g) 180 h) 230 i) 490
j) 700 k) 990 l) 1430
m) 2030 n) 4710 o) 7840
- a) 100 b) 100 c) 300
d) 300 e) 800 f) 900
g) 1200 h) 1600 i) 1800
j) 2300 k) 2600 l) 3800
m) 4300 n) 6200 o) 9000
- a) 2000 b) 1000 c) 2000
d) 3000 e) 3000 f) 4000
g) 5000 h) 7000 i) 9000
j) 10000 k) 12000 l) 17000
m) 25000 n) 29000 o) 38000

Solve!

Populations: 32146
(Hint: Descending order means the digits entered get smaller each time.)
Extension: 96451

3. Operations 1

Practise!

- a) 753 b) 850 c) 2383
d) 8200 e) 9588 f) 13381
g) €7491 h) €13564
i) €37270 j) €59786
- a) 1809 b) 3797 c) 2207
d) 4426 e) 5218 f) 2914
g) 5753 h) 4727 i) 3767
j) 6543 k) 5362 l) 8836
- a) Oceantown b) 4181
c) Seapoint d) 4665
e) 26059 f) 29180
g) $2008 = 3670$, $2013 = 45$
h) 3625
i) $2008 = 47952$,
 $2013 = 50055$
j) 2103

Solve!

Lost marbles: 27 marbles
(Hint: $12 + 11 + 10 + 6 - 12 = 27$)
Extension: Answers will vary.

4. Number Theory 1

Practise!

- 49, 11, 37, 65, 23, 99
- 52, 70, 48, 96, 14
- 19, 37, 41, 55, 110
- 28, 51, 33, 49, 36, 81
- a) 1, 2, 3, 4, 6, 12
b) 1, 2, 4, 8, 16
c) 1, 3, 9, 27
d) 1, 2, 4, 8, 16, 32
e) 1, 2, 4, 5, 10, 20
f) 1, 2, 3, 6, 7, 14, 21, 42
- a) 1, 3
b) 1, 2, 4
c) 1, 2, 4, 8
d) 1, 2, 3, 6
e) 1, 3, 9
f) 1, 2, 7, 14
- a) 4, 8, 12, 16, 20, 24, 28, 32
b) 9, 18, 27, 36, 45, 54, 63, 72
c) 5, 10, 15, 20, 25, 30, 35,

- 40
d) 7, 14, 21, 28, 35, 42, 49, 56
e) 6, 12, 18, 24, 30, 36, 42, 48
f) 12, 24, 36, 48, 60, 72, 84, 96
8. a) True b) False c) False d) True
e) True f) False

Solve!

Closest five: 58
Extension: 24

5. Lines and Angles

Practise!

- a) Oblique
b) Horizontal
c) Perpendicular
d) Parallel
e) Vertical
- a) Reflex
b) Acute
c) Straight
d) Right
e) Obtuse
- a) Reflex b) Right
c) Obtuse d) Acute
e) Straight f) Acute
g) Full rotation h) Obtuse
- a) 45° b) 130° c) 315°
d) 95° e) 55°
- Teacher check
- a) 77° b) 55° c) 18°

Solve!

Letter angle:
a) E and H
b) T
c) Answers will vary
(Hint: F has only 3 right angles.)
Extension: A, K, M, N, R, V, W, X, Y, Z

6. Equations

Practise!

- $\div$
 - $-$
 - $\times$
 - $+$
 - $-$
 - $\div$
- $19 \times 12 = 228$
 - $755 - 468 = 287$
 - $384 \div 24 = 16$
 - $67 + 79 + 58 + 86 = 290$
- 135
 - 3601
 - 109
 - 6253
 - 2108
 - 5423
 - 4.368
 - 968
- Teacher check

Solve!

Different numbers: $A = 3$ and $B = 5$
 (Hint: $3 \times 3 = 9$ and $5 \times 5 = 25$)
 Extension: $J = 4$ and $K = 6$

7. Time

Practise!

- 107 secs
 - 148 secs
 - 216 secs
 - 293 secs
 - 432 secs
 - 309 secs
 - 414 secs
 - 589 secs
- 85 mins
 - 114 mins
 - 217 mins
 - 138 mins
 - 346 mins
 - 542 mins
 - 417 mins
 - 504 mins
- 7 hrs 54 mins
 - 6 hrs 56 mins
 - 7 hrs 15 mins
 - 9 hrs 17 mins
 - 7 hrs 17 mins
 - 9 hrs 36 mins
 - 10 hrs 23 mins
 - 13 hrs 51 mins
 - 3 hrs 15 mins
 - 1 hr 24 mins
 - 3 hrs 9 mins
 - 2 hrs 45 mins
 - 2 hrs 46 mins
 - 53 mins
 - 4 hrs 39 mins
 - 1 hr 46 mins
- 55 mins
 - 1 hr 40 mins
 - 1 hr 15 mins
 - 10 mins
 - 4 hrs 10 mins

Solve!

Future time: 14 February
 (Hint: $2 + 14 + 28$)
 Extension: 11 November

8. Fractions 1

Practise!

- $\frac{3}{9}$
 - $\frac{6}{8}$
 - $\frac{8}{12}$
 - $\frac{3}{18}$
 - $\frac{4}{10}$
 - $\frac{21}{30}$
- Teacher check
- $\frac{2}{3}$
 - $\frac{3}{4}$
 - $\frac{3}{4}$
 - $\frac{4}{5}$
 - $\frac{7}{8}$
 - $\frac{6}{7}$
 - $\frac{4}{5}$
 - $\frac{7}{8}$
 - $\frac{5}{7}$
- Teacher check

Solve!

Paper fold: a) 8 pieces b) $\frac{8}{8}$
 (Hint: $2 \times 2 \times 2$ pieces)

Extension: a) $\frac{4}{8}$ b) $\frac{2}{8}$

10. 2-D Shapes

Practise!

- Equilateral triangle
 - Pentagon
 - Rhombus
 - Rectangle
 - Circle
 - Hexagon
 - Isosceles triangle
 - Square
 - Scalene triangle
 - Parallelogram
-

2.

Polygon	Regular Polygon	Other
Parallelogram	Equilateral triangle	Circle
Rectangle	Pentagon	
Scalene triangle	Square	
Rhombus	Hexagon	

- Equilateral triangle
- Teacher check
- Yes – pentagons tessellate
- A, V, E, I, M

Solve!

Balancing act: a) No b) Lighter
 (Hint: 1 triangle weighs the same as 4 circles.)
 Extension: 8

11. Operations 2

Practise!

- 1336
 - 1752
 - 2193
 - 4238
 - 5160
 - 5920
 - 8062
 - 12062
 - 6732
 - 9688
 - 6192
 - 4023
- 26
 - 29
 - 18
 - 35
 - 39
 - 89
- 159
 - 328
 - 383 R 9
 - 735 R 3
 - 628
 - 549
 - 1687 R 4
 - 687 R 7
 - 743
 - 682
 - 556 R 5
 - 986
- 7
 - 5
 - 8
 - 6
 - 9
 - 4
- 8
 - 9
 - 6
 - 7
 - 5
 - 8
- 9 R 1
 - 8 R 14
 - 7 R 30
 - 6 R 31
 - 8 R 12
 - 7 R 36
- 16
 - 27
 - 18 R 15
 - 24
 - 19
 - 22 R 37
- €67
- 37 packets and 3 left over

Solve!

Short cut: 1234
 (Hint: 9 lots of a number minus 8 lots of a number leaves the number itself.)
 Extension: 64001
 ($6420 \times 10 = 64200 - 199 = 64001$)

12. Chance

Practise!

- 1 in 6
 - 1 in 2
 - 1 in 3
 - 1 in 2
 - 1 in 2
- 4 in 12, or 1 in 3
 - 2 in 12, or 1 in 6
 - 1 in 12
- 4 in 23
 - 8 in 23
- Teacher check
- Teacher check

6. a) 1 in 7 b) 1 in 2
c) 5 in 26 d) 1 in 52

Solve!

Card shuffle: a) $\frac{3}{7}$ b) $\frac{5}{7}$

(Hint: 13, 15 and 17 form a number pattern that moves up in 2s.)

Extension: Answers will vary

13. Fractions 2

Practise!

- a) $\frac{2}{3}$ b) $\frac{6}{6}$ c) $\frac{5}{7}$
d) $\frac{7}{9}$ e) $\frac{10}{10}$ f) $\frac{9}{11}$
- a) $\frac{3}{4}$ b) $\frac{5}{6}$ c) $\frac{5}{12}$
d) $\frac{7}{8}$
- a) $\frac{4}{6}$ b) $\frac{3}{10}$ c) $\frac{3}{8}$
d) $\frac{3}{12}$ e) $\frac{5}{12}$ f) $\frac{7}{24}$
- a) $\frac{17}{12}$, $1\frac{5}{12}$
b) $\frac{9}{6}$, $1\frac{3}{6}$
c) $\frac{11}{8}$, $1\frac{3}{8}$
d) $\frac{41}{24}$, $1\frac{17}{24}$
e) $\frac{23}{18}$, $1\frac{5}{18}$
f) $\frac{22}{15}$, $1\frac{7}{15}$
- a) $\frac{3}{7}$ b) $\frac{5}{6}$ c) $\frac{5}{8}$
d) $\frac{3}{5}$ e) $\frac{3}{10}$ f) $\frac{5}{12}$
- a) $\frac{5}{8}$ b) $\frac{1}{9}$ c) $\frac{1}{12}$
d) $\frac{1}{12}$ e) $\frac{1}{20}$ f) $\frac{1}{18}$
- $\frac{5}{24}$
- $\frac{22}{15}$ km, or $1\frac{7}{15}$ km

Solve!

Busy bus: a) 24 b) 8 students
(Hint: $40 - 10 + 4 - 17 + 7 = 24$ and $24 \div 3 = 8$)
Extension: a) 33
b) 3 male students

14. Number Theory 2

Practise!

- b) 19 is prime
c) 31 is prime
d) 53 is prime
- a) 9 c) 21
d) 27 f) 33
- Teacher check
- a) 16 b) 36 c) 81
d) 121 e) 225 f) 529
- a) 25 b) 64 c) 256
d) 576 e) 841 f) 1444

Solve!

Boys and girls: d) From the start of the line, the boys are in the 4 times table pattern.

(Hint: There will be a boy in position 4, 8, 12, 16...)

Extension: a) Boy b) Girl

Pattern maker: a) 17 b) 30

(Hint: Every 3rd number after 2 is not used.)

Extension: 33

15. The Circle

Practise!

- Teacher check
- The diameter is twice as long as the radius
-

	Radius	Diameter
Circle A	14cm	28cm
Circle B	16cm	32cm
Circle C	21.5cm	43cm
Circle D	27.5cm	55cm
Circle E	48.5m	97m
Circle F	66.5cm	113cm

- Teacher check
- Teacher check
- No

Solve!

Golf score: a) 128 b) 137 and 146 c) I beat them by 9 shots and 18 shots
(Hint: 119 has repeated digits.)
Extension: 147

16. Fractions 3

Practise!

- a) $\frac{9}{5}$ b) $\frac{17}{9}$ c) $\frac{13}{10}$ d) $\frac{13}{6}$
e) $\frac{11}{4}$ f) $\frac{21}{8}$ g) $\frac{25}{8}$ h) $\frac{55}{12}$
i) $\frac{43}{8}$ j) $\frac{23}{3}$ k) $\frac{55}{9}$ l) $\frac{59}{6}$
- a) $3\frac{2}{3}$ b) $4\frac{3}{4}$ c) $2\frac{8}{9}$
d) $9\frac{1}{2}$ e) $5\frac{2}{5}$ f) $6\frac{1}{6}$
g) $4\frac{1}{12}$ h) $4\frac{3}{8}$ i) $5\frac{7}{10}$
j) $5\frac{4}{11}$ k) $9\frac{5}{7}$ l) $5\frac{8}{9}$
- a) $\frac{15}{3}$ b) $\frac{42}{6}$ c) $\frac{72}{9}$
d) $\frac{48}{8}$ e) $\frac{45}{5}$ f) $\frac{66}{11}$
g) $\frac{48}{4}$ h) $\frac{96}{12}$
- a) $2\frac{11}{12}$ b) $3\frac{9}{10}$ c) $5\frac{7}{24}$
d) $6\frac{7}{12}$ e) $7\frac{11}{18}$ f) $10\frac{11}{20}$
- a) $3\frac{1}{4}$ b) $4\frac{1}{12}$ c) $2\frac{13}{18}$
d) $6\frac{5}{24}$ e) $3\frac{7}{15}$ f) $4\frac{11}{18}$
- a) €94 b) €48
c) €47 d) €66
e) €493 f) €396
- a) €405 b) €278
c) €996 d) €1869
e) €1920 f) €1176
- a) €1584 b) €1290
c) €3003 d) €1314
e) €3036 f) €1590
- a) $\frac{5}{6}$ b) $\frac{3}{5}$ c) $\frac{4}{5}$
d) $\frac{3}{4}$ e) $\frac{5}{6}$ f) $\frac{7}{10}$

Solve!

Flying high: First class 50, business class 100, economy class 200

(Hint: 50 is $\frac{1}{4}$ of 200)

Extension: 4 times as expensive

18. Decimals

Practise!

- 0.1
 - 0.8
 - 0.5
 - 0.4
 - 1.3
 - 2.1
 - 3.6
 - 2.9
- $\frac{5}{10}$
 - $\frac{7}{10}$
 - $\frac{2}{10}$
 - $\frac{6}{10}$
 - $\frac{14}{10}$
 - $\frac{26}{10}$
 - $\frac{48}{10}$
 - $\frac{71}{10}$
- 0.03
 - 0.07
 - 0.17
 - 0.27
 - 0.16
 - 0.35
 - 0.56
 - 0.8
- $\frac{3}{100}$
 - 7
 - $\frac{5}{10}$
 - 50
 - 6
 - $\frac{5}{100}$
- Teacher check
- $\frac{9}{1000}$
 - $\frac{2}{1000}$
 - $\frac{19}{1000}$
 - $\frac{48}{1000}$
 - $\frac{194}{1000}$
 - $\frac{703}{1000}$
- 1
 - 5
 - 8
 - 4
 - 6
 - 2
- 1
 - 2
 - 8
 - 15
 - 29
 - 19
 - 53
 - 8
 - 48
- 37.8, 3.87, 3.8, 3.78
 - 17.251, 17.215, 17.152, 17.125
 - 46.63, 46.3, 43.6, 43.58
 - 0.794, 0.749, 0.497, 0.479
- 38.418
 - 791.465
 - 232.626
 - 574.104
 - 88.855
 - 279.806
- 0.45
 - 28.868
 - 105.52
 - 51.773
 - 2.59
 - 74.318
- 20.56
 - 221.4
 - 52.255
 - 1318.22
 - 245.392
 - 184.144
- 0.093
 - 1.58
 - 37.6
 - 5.4
 - 2.8
 - 3.7

Solve!

Radio waves: a) 98.2 b) 99.1
(Hint: Half of 1.8 is 0.9.)
Extension: 104.7

19. Money

Practise!

- Bananas = €4.32
 - Tomatoes = €5.31
 - Milk = €8.73
 - Chocolates = €21.24
 - Cucumbers = €6.21
 - Mugs = €12.42
- Wendy = €171
 - Oliver = €396
 - Raymond = €504
 - Kevin = €204
 - Ernie = €544
 - Rachel = €882
-

Name	Hourly Pay	Hours Worked per Day	Days Worked per Week	Weekly Wage
Colin	€11	7	5	€385
Angela	€9.50	6	6	€342
Susan	€13	5	4	€260
Helen	€12.50	8	6	€600

- €693
 - €207

Solve!

Change up: a) €2, 50c, 10c, 5c
b) €1, 20c, 5c
(Hint: Her change was €2.65.)
Extension: a) €2, €2, 50c, 10c, 5c
b) 10c, 10c, 10c, 10c, 5c

20. Rules and Properties

Practise!

- Teacher check
- 73
 - 92
 - 20
 - 252
 - 376
 - 121
 - 17
 - 19
 - 67
 - 8
 - 49
 - 12
- 3337
 - 1543
 - 2584
 - 376
 - 2949
 - 589
- Add 5, then 10, then 15...
 - Subtract 12, then 11, then 10...
 - Multiply by 3
 - Add 6, subtract 3 and repeat
 - Divide by 2
 - Add 2, then 3, then 4...
- 35, 42, 49
 - 77, 66, 55
 - 17, 23, 30
 - 50, 60, 45
 - 34, 46, 60
 - 34, 31, 30

Solve!

Signs in place: a) $7 \times 2 - 5$
b) $24 \div 6 \times 5$
Extension: a) $(7 - 2) \times 5$
b) $32 \times 2 \div 4 + 5$

21. Length

Practise!

- 126cm
 - 3m 8cm
 - 2.69m
 - 4.07m
 - 7km 18m
 - 6184m
 - 5470m
 - 0.726km
- 11.08m
 - 9.43m
 - 13.86m
 - 11.51m
 - 12.24m
 - 17.38m
- 3.37m
 - 0.55m
 - 2.67m
 - 1.75m
 - 5.79m
 - 1.87m
- 8.755km
 - 9.636km
 - 15.297km
 - 9.739km
 - 1.775km
 - 5.225km
 - 6.235km
 - 0.566km
- 1cm 4mm
 - 2.7cm
 - 43mm
 - 38mm
 - 10cm 6mm
 - 12.9cm
- 16.6cm
 - 17cm
 - 29.2cm
 - 18.7cm
 - 1.6cm
 - 4.8cm
 - 8.5cm
 - 1.8cm
- 29.52m
 - 20.82m
 - 45.92m
 - 42.413km
 - 52.368km
 - 35.945km
- 6.9cm
 - 0.389km
 - 5.67m
 - 7.64m
 - 8.7cm
 - 0.576km
- 120cm
 - 170mm
 - 236m
 - 31cm
 - 4.42m
 - 10.464km

Solve!

Paddock puzzle: a) 50m b) 125m
(Hint: $500m \div 2 = \text{length} + \text{width}$)
Extension: $8\frac{1}{2}m$

22. 3-D Shapes

Practise!

1. a) Sphere b) Pyramid c) Cylinder d) Cube e) Cuboid f) Cone
2. a) Pyramid b) Cube c) Cylinder d) Cuboid
3. Teacher check
- 4.

Shape	No. of Faces	No. of Edges	No. of Vertices
Cuboid	6	12	8
Pyramid	5	8	5
Cube	6	12	8
Cylinder	3	0	0
Tetrahedron	4	6	4
Triangular prism	5	9	6

Solve!

Build a cube: a) 6 more cubes b) 12 edges, 6 faces, 8 vertices
(Hint: 8 cubes make a $2 \times 2 \times 2$ cube.)
Extension: a) 40 faces b) 12 edges c) 8 vertices

23. Percentages

Practise!

1. a) 7% b) 15% c) 89% d) 56% e) 8% f) 67% g) 94% h) 39% i) 72%
2. a) $\frac{23}{100}$ b) $\frac{16}{100}$ c) $\frac{5}{100}$ d) $\frac{31}{100}$ e) $\frac{76}{100}$ f) $\frac{42}{100}$ g) $\frac{54}{100}$ h) $\frac{83}{100}$ i) $\frac{97}{100}$
3. a) $\frac{13}{100} = 13\%$ b) $\frac{58}{100} = 58\%$ c) $\frac{27}{100} = 27\%$ d) $\frac{39}{100} = 39\%$ e) $\frac{71}{100} = 71\%$
 f) $\frac{6}{100} = 6\%$ g) $\frac{94}{100} = 94\%$ h) $\frac{65}{100} = 65\%$ i) $\frac{82}{100} = 82\%$
4. a) €73 b) €0.79 c) €0.96 d) €234 e) €175 f) €316
5. a) 54 b) 301 c) 540 d) 96 e) 423 f) 612
6. a) 408 b) 2496.6 c) 468.9 d) 3776 e) 1862.6 f) 3377.7
7. Coat = €63
 Shoes = €81
 Freezer = €294
 Jacket = €12
 TV = €189
 Dishwasher = €273
8. CD = €15.90
 Roller blades = €96
 Hoodie = €37
 Bed = €529
 Mobile phone = €133
 Tablet PC = €297

Solve!

Many times bigger: 9397, 9793, 7939 or 3979
(Hint: The 9s must be 2 places (10×10) apart.)
Extension: 1000 times bigger

25. Directed Numbers

Practise!

- Belfast = 10°C Edinburgh = 17°C London = 12°C
Dublin = 13°C Glasgow = 11°C Manchester = 13°C
- −€18.98
-

	Floor Entered Lift	Floors Travelled	Floor Exited Lift
Carmel	7	9 down	−2
Noel	−3	14 up	11
Katherine	2	6 down	−4
Tony	−2	11 up	9
Miriam	12	13 down	−1
Brian	−2	3 up	1

- 102m

Solve!

Going up: a) Level 7 b) 14 levels, including the ground floor

(Hint: $7 - 5 + 9 - 4 = 7$)

Extension: 21

26. Weight

Practise!

- a) 6000g b) 5250g c) 2800g
d) 9g e) 724g f) 5083g
- a) 2kg 871g, 2.871kg
b) 7kg 804g, 7.804kg
c) 0kg 496g, 0.496kg
d) 8kg 378g, 8.378kg
e) 0kg 39g, 0.039kg
f) 4kg 230g, 4.23kg
- a) 10.878kg b) 15.365kg
c) 10.984kg d) 12.509kg
- a) 6.467kg b) 2.944kg
c) 2.468kg d) 2.763kg
- a) 43.104kg b) 36.882kg
c) 24.304kg d) 58.650kg
e) 194.6kg f) 70.686kg
- a) 0.384kg b) 0.437kg
c) 0.33kg d) 0.059kg
e) 0.028kg f) 0.039kg
- 23.354kg
- 227.838kg
- 48.928kg
- 0.269kg

Solve!

Heavy water: 250g

(Hint: 1000ml or 1l = 1000g)

Extension: 100kg 500g

27. Representing and Interpreting Data

Practise!

- Teacher check
- Teacher check
- Ham = 60, Pepperoni = 30,
Onion = 20, Peppers = 10

Solve!

Favourite pastimes:

- 1
- Teacher check
(Hint: Votes: 20 voted for hiking,
10 voted for music, 5 voted for
reading and 4 voted for watching
movies, therefore 1 voted for
gardening.)
Extension:
a) 12 voted for watching TV,
10 voted for sport,
9 voted for computer games,
5 voted for visiting friends
b) Teacher check

28. Area 1

Practise!

- a) cm^2 b) m^2 c) m^2
d) cm^2 e) cm^2 f) m^2
- a) 247cm^2 b) 648cm^2

- 988 cm^2 d) 851 cm^2
e) 1575 cm^2 f) 1692 cm^2
- a) 36 cm^2 b) 48 cm^2
c) 21 cm^2 d) 40 cm^2
e) 70 cm^2 f) 108 cm^2

- 127.4 m^2

- Joe's TV has a greater area

Solve!

Tiling times: 50 tiles

(Hint: 5×10)

Extension: 6 times longer

29. Capacity

Practise!

- a) 3l 276ml b) 1l 493ml
c) 3l 40ml d) 2l 180ml
e) 8l 253ml f) 6l 700ml
g) 9l 18ml h) 5l 265ml
i) 0l 48ml
- a) 1248ml b) 4006ml
c) 2170ml d) 5002ml
e) 3725ml f) 7360ml
g) 5900ml h) 64ml
i) 8059ml
- a) 1.485l b) 3.87l
c) 2.009l d) 6.038l
e) 0.549l f) 0.003l
- a) 3.976l b) 9.989l
c) 11.049l d) 5.881l
e) 13.077l f) 10.359l



5. a) 1.211l b) 1.215l c) 3.797l
d) 2.286l e) 3.571l f) 3.877l
6. a) 22.792l b) 17.433l
c) 40.272l d) 31.408l
e) 91.702l f) 163.642l
7. a) 0.384l b) 0.317l c) 0.874l
d) 2.7l e) 0.053l f) 0.056l
8. 5.46l
9. 12.568l
10. 0.717l
11. 0.26l

Solve!

Bucket brigade: Fill bucket C from bucket A, then pour this water into bucket B. Then fill bucket C from bucket A.

(Hint: Redraw the levels of the buckets each time.)

Extension: Fill bucket B from bucket A. Then fill bucket C from bucket A. Tip out the remaining water in bucket A. Then pour the contents of buckets C and B into bucket A.

30. Averages

Practise!

1. a) 6.9 b) 144ml c) €2.97
d) 273g e) 1001
f) 2.208333km
2. a) 1.47m
b) 2 above and 3 below
c) 1.5m
d) 1.44m
e) 1.32m
3. a) 1593 b) 1713

Solve!

Champion surfer: 7

(Hint: $7 + 7 + 8 = 52 - 30$)

Extension: 5

31. Area 2

Practise!

1. a) 15cm^2 b) 12cm^2
c) 10.5cm^2 d) 28cm^2
e) 35cm^2
2. a) 23cm^2 b) 34.48cm^2
- 3.

Car Park	Length	Width	Area
1	27m	35m	945m^2
2	34m	28m	952m^2
3	26m	26m	676m^2
4	39m	23m	897m^2
5	27m	33m	891m^2
6	35m	29m	1015m^2

Solve!

Symbol shake-up: a) 6 b) 40

(Hint: The symbol # means halve and take away 2.)

Extension: a) 14 b) 20

(Hint: The symbol * means divide by 3 and add 2.)

Revision Tests Answers

2. Place Value

- Teacher check
- a) 900 b) 8 c) 20000
d) 9000 e) 90
- a) 225, 270, 315, 360
b) 21040, 21540, 22040
- a) 1700, 170 b) 830, 83
c) 2940, 294 d) 3650, 365
e) 790, 79
- Teacher check
- a) $\frac{2}{10}$ b) 500
c) 2 d) $\frac{1}{100}$ e) 60
- a) 50 b) 170
c) 300 d) 1590
e) 16790
- a) 100 b) 100
c) 1000 d) 6200
e) 24300
- a) 3000 b) 8000
c) 10000 d) 17000
e) 29000

3. Operations 1

- a) 1561 b) 1698
c) 9395 d) 12799
e) €8451 f) €12735
g) €26819 h) €54819
- a) 3316 b) 3386
c) 3017 d) 7435
e) 2885 f) 4029
g) 4759 h) 4735
- 10169
- 35177

4. Number Theory 1

- 91, 53, 47, 85
- 14, 80, 66
- 29, 13, 61
- 25, 33, 9
- a) 1, 2, 7, 14
b) 1, 2, 3, 6, 9, 18
c) 1, 2, 11, 22
d) 1, 2, 3, 5, 6, 10, 15, 30
- a) 1, 2, 4 b) 1, 2, 4
c) 1, 2, 3, 6
- a) 6, 12, 18, 24, 30
b) 11, 22, 33, 44, 55
c) 8, 16, 24, 32, 40
d) 9, 18, 27, 36, 45
- a) True b) False c) False
d) True e) True f) False

5. Lines and Angles

- Teacher check
- Teacher check
- a) Obtuse b) Reflex
c) Right d) Straight
e) Acute
- Teacher check
- a) 39° b) 67° c) 19°
d) 48°

6. Equations

- a) x b) $+$ c) $\div$
d) $-$ e) $-$ f) x

- a) $432 \div 9 = 48$
b) $18 \times 14 = 252$
c) $3027 - 1698 = 1329$
d) $137 + 246 + 98 = 481$
- a) 149 b) 3278 c) 1118
d) 5042 e) 3756 f) 50544

7. Time

- a) 98 secs b) 212 secs
c) 259 secs d) 505 secs
- a) 73 mins b) 177 mins
c) 328 mins d) 217 mins
- a) 18:27 b) 04:52
c) 11:47 d) 21:05
- a) 7:43pm b) 12:28am
c) 10:05pm d) 2:30pm
- a) 4 hrs 6 mins
b) 8 hrs 42 mins
c) 8 hrs 55 mins
d) 11 hrs 31 mins
e) 2 hrs 47 mins
f) 1 hr 42 mins
g) 23 mins
h) 4 hrs 56 mins

8. Fractions 1

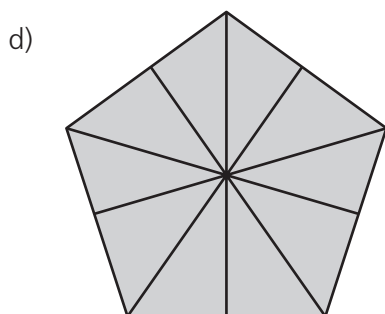
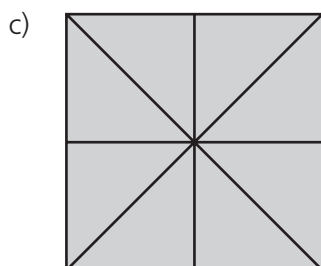
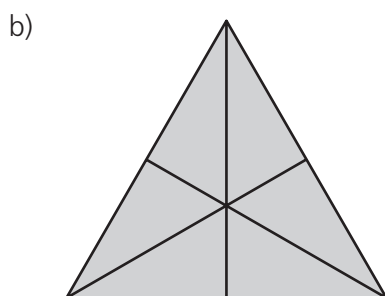
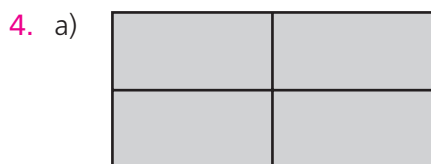
- a) $\frac{2}{8}$ b) $\frac{6}{9}$ c) $\frac{12}{20}$ d) $\frac{15}{18}$
- Teacher check
- a) $\frac{3}{4}$ b) $\frac{2}{3}$ c) $\frac{4}{5}$
d) $\frac{3}{5}$ e) $\frac{9}{10}$ f) $\frac{4}{5}$
- Teacher check

10. 2-D Shapes

- Teacher check
- Pentagon – all the others are quadrilaterals
-

Shape	Polygon	Regular Polygon	Quadrilateral	Other
Square	X	X	X	
Pentagon	X	X		
Rectangle	X		X	
Isosceles triangle	X			
Circle				X
Scalene triangle	X			
Rhombus	X		X	
Equilateral triangle	X	X		





5. Teacher check

11. Operations 2

1. a) 596 b) 1958 c) 2242
d) 3784 e) 5712 f) 6107
2. a) 18 b) 14 c) 18
d) 15 e) 32
3. a) 224 b) 276 R 4
c) 583 R 1 d) 472
e) 739 R 6
4. a) 9 b) 7 c) 6
d) 8 e) 7 f) 5
5. a) 8 b) 6 c) 7
d) 5 e) 7
6. a) 8 R 7 b) 8 R 14 c) 8 R 11
d) 7 R 9 e) 8 R 35
7. a) 18 b) 24 c) 35
d) 18 e) 27 f) 16
8. 27
9. 4758km

12. Chance

1. Teacher check
2. Teacher check
3. a) 1 in 2 chance b) 1 in 2 chance
c) 1 in 6 chance d) 1 in 7 chance
4. a) 7 in 32 b) 15 in 32 c) basketball or hockey

13. Fractions 2

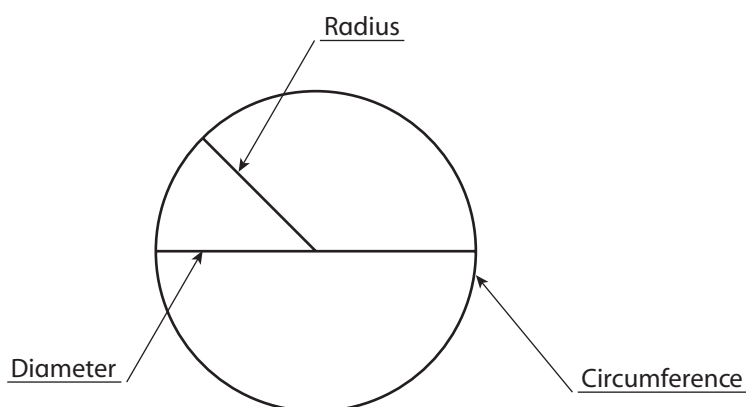
1. a) $\frac{4}{4}$ b) $\frac{4}{5}$ c) $\frac{6}{8}$ d) $\frac{8}{10}$ e) $\frac{7}{9}$ f) $\frac{12}{12}$
2. a) $\frac{3}{6}$ b) $\frac{7}{8}$ c) $\frac{7}{10}$ d) $\frac{7}{12}$ e) $\frac{11}{12}$ f) $\frac{5}{18}$
3. a) $\frac{17}{12}$, $1\frac{5}{12}$ b) $\frac{18}{12}$, $1\frac{6}{12}$ c) $\frac{11}{8}$, $1\frac{3}{8}$
d) $\frac{41}{24}$, $1\frac{17}{24}$ e) $\frac{23}{18}$, $1\frac{5}{18}$ f) $\frac{22}{15}$, $1\frac{7}{15}$
4. a) $\frac{3}{7}$ b) $\frac{5}{6}$ c) $\frac{5}{8}$ d) $\frac{3}{5}$ e) $\frac{3}{10}$ f) $\frac{7}{12}$
5. a) $\frac{5}{8}$ b) $\frac{1}{9}$ c) $\frac{1}{12}$ d) $\frac{1}{12}$ e) $\frac{1}{20}$ f) $\frac{1}{18}$
6. $\frac{5}{24}$
7. $\frac{22}{15}$ km or $1\frac{7}{15}$ km

14. Number Theory 2

1. 29, 17, 41, 67, 89
2. 18, 25, 22, 35
3. Teacher check
4. 4
5. 25
6. 49
7. 100
8. 196
9. 484
10. a) 16 b) 81 c) 144 d) 289 e) 529 f) 1156

15. The Circle

1.



2.

	Radius	Diameter
Circle A	8cm	16cm
Circle B	18cm	36cm
Circle C	27cm	54cm
Circle D	13.5cm	27cm
Circle E	28.5cm	57cm
Circle F	56.5cm	113cm

3. Teacher check 4. Teacher check

16. Fractions 3

- $\frac{7}{4}$
 - $\frac{17}{6}$
 - $\frac{29}{8}$
 - $\frac{41}{10}$
 - $\frac{25}{9}$
 - $\frac{27}{7}$
 - $\frac{43}{5}$
 - $\frac{50}{11}$
- $3\frac{2}{5}$
 - $5\frac{1}{4}$
 - $4\frac{5}{8}$
 - $4\frac{2}{7}$
 - $9\frac{4}{9}$
 - $6\frac{5}{6}$
 - $5\frac{1}{12}$
 - $9\frac{2}{3}$
- $\frac{12}{2}$
 - $\frac{40}{8}$
 - $\frac{36}{3}$
 - $\frac{35}{5}$
 - $\frac{44}{4}$
 - $\frac{54}{6}$
 - $\frac{56}{7}$
 - $\frac{81}{9}$
- $3\frac{3}{4}$
 - $5\frac{7}{6}$ or $6\frac{1}{6}$
 - $3\frac{25}{24}$ or $4\frac{1}{24}$
- $1\frac{1}{8}$
 - $2\frac{5}{12}$
 - $2\frac{7}{18}$
- €79
 - €99
 - €98
- €351
 - €708
 - €595
- €3965
 - €2382
 - €3556

18. Decimals

- 0.3
 - 0.7
 - 0.9
 - 1.4
 - 0.05
 - 0.17
 - 0.29
 - 0.83
 - 0.001
 - 0.023
 - 0.178
 - 0.403
- $\frac{5}{10}$
 - $\frac{7}{10}$
 - $\frac{2}{10}$
 - $\frac{18}{10}$
 - $\frac{37}{100}$
 - $\frac{3}{100}$
 - $\frac{99}{100}$
 - $\frac{57}{100}$
 - $\frac{29}{1000}$
 - $\frac{8}{1000}$
 - $\frac{175}{1000}$
 - $\frac{736}{1000}$

- $\frac{8}{1000}$
 - 10
 - $\frac{2}{10}$
 - 2
 - $\frac{5}{100}$

4. Teacher check

- 1
 - 4
 - 10
 - 13
 - 18
 - 36
 - 5
 - 20
 - 42
- 30.315
 - 392.886
 - 295.923
- 1.23
 - 21.882
 - 524.67
- 58.03
 - 493.2
 - 16.51
- 0.156
 - 3.715
 - 0.15

19. Money

- Turnips = €4.56
 Yoghurts = €6.08
 Sliced pans = €10.32
 Toothpaste = €23.12
 Beans = €7.04
 Biscuits = €14.80
- Eamonn = €280
 Adam = €552
 Rita = €312
 Noel = €264.60
 Elaine = €310
 Ruby = €420

3.

Name	Hourly Pay	Hours Worked per Day	Days Worked per Week	Weekly Wage
Wendy	€13	5	5	€325
Alan	€9	7	6	€378
Gemma	€12	6	4	€288
Eric	€16.50	8	5	€660

20. Rules and Properties

- 85
 - 97
 - 7
 - 371
 - 477
 - 169
 - 8
 - 8
 - 69
 - 9
 - 72
 - 11

- Multiply by 2
 - Subtract 7
 - Multiply by 5
 - Subtract 9, then 8, then 7...
- 30, 36, 42
 - 96, 84, 72
 - 21, 28
 - 25, 12

21. Length

- 147cm
 - 2m 3cm
 - 3.79m
 - 5km 45m
 - 2793m
 - 3810m
 - 1cm 9mm
 - 5.2cm
 - 73mm
- 8.83m
 - 8.57m
 - 3.84m
 - 2.33m
 - 14.108km
 - 5.272km
 - 5.369km
 - 1.383km
 - 12.9cm
 - 20.5cm
 - 5.7cm
 - 9.3cm
- 41.52m
 - 77.22km
 - 138.7cm
- 3.9cm
 - 0.47m
 - 0.058km
- 132cm
 - 256mm
 - 13m



22. 3-D Shapes

1. a) Triangular prism b) Cube c) Cylinder d) Tetrahedron

2.

Shape	No. of Faces	No. of Edges	No. of Vertices
Cuboid	6	12	8
Pyramid	5	8	5
Cube	6	12	8
Triangular prism	5	9	6

23. Percentages

1. a) 3% b) 11% c) 65%
d) 32% e) 87% f) 90%
2. a) $\frac{71}{100}$ b) $\frac{20}{100}$
c) $\frac{36}{100}$ d) $\frac{52}{100}$
e) $\frac{81}{100}$ f) $\frac{100}{100}$
3. a) $\frac{25}{100} = 25\%$ b) $\frac{39}{100} = 39\%$
c) $\frac{61}{100} = 61\%$ d) $\frac{57}{100} = 57\%$
e) $\frac{92}{100} = 92\%$ f) $\frac{9}{100} = 9\%$
4. a) €69 b) €5.88
c) €7.32 d) €447
e) €102 f) €437
5. MP3 player = €108
Bike = €171
Sofa = €291
Laptop = €306
6. Mobile phone = €119.25
Book = €18
Hoodie = €41.21
TV = €483

25. Directed Numbers

1. The 9th floor
2. 72m, 54m, 96m, 76m, 88m, 110m
3. -€19.50

26. Weight

1. a) 8000g b) 4500g c) 2750g
d) 7g e) 186g f) 8017g
2. a) 1kg 984g, 1.984kg
b) 2kg 3g, 2.003kg
c) 0kg 712g, 0.712kg
d) 6kg 507g, 6.507kg
e) 0kg 28g, 0.028kg
f) 3kg 750g, 3.75kg
3. a) 7.62kg b) 14.248kg
c) 15.41kg d) 9.32kg
4. a) 5.354kg b) 3.972kg
c) 1.717kg
5. a) 36.504kg b) 42.25kg
c) 16.524kg
6. a) 0.347kg b) 0.094kg
c) 0.057kg

27. Representing and Interpreting Data

1. a) 30 b) 126 c) 18
2. Teacher check
3. Teacher check

28. Area 1

1. a) 238cm² b) 494cm²
c) 952cm² d) 1189cm²
e) 1296cm² f) 1976cm²
2. a) 40cm² b) 42cm²
c) 27cm²
3. 106.4m²
4. The area of Karen's base is greater

29. Capacity

1. a) 2l 97ml b) 5l 980ml
c) 0l 369ml d) 1l 483ml
2. a) 3179ml b) 2035ml
c) 1740ml d) 734ml
3. a) 1.029l b) 4.691l
c) 7.007l d) 5.396l
4. a) 7.846l b) 12.707l
c) 14.071l d) 13.464l
5. a) 3.451l b) 1.531l
c) 2.838l d) 3.185l
6. a) 14.546l b) 33.82l
c) 26.152l
7. a) 0.398l b) 0.317l c) 0.874l

30. Averages

1. a) 9.3 b) 239cm
c) €5.04 d) 338l
e) 2313 f) 1.904km
2. a) 2255 b) 2351

31. Area 2

1. a) 108cm² b) 231cm²
- 2.

Length	Width	Area
24m	19m	456m ²
28m	23m	644m ²
38m	26m	962m ²
38m	28m	1064m ²
43m	34m	1462m ²
35m	46m	1610m ²

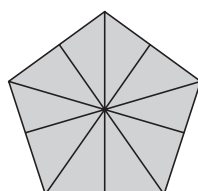
Term Assessments Answers

Christmas

1. 32418
2. a) 96432 b) 23469
3. a) 81156 b) 80056
4. 1780, 1800, 1820, **1840**, 1860, 1880, **1900**
5. a) 1.98, 1.93, 1.9, 1.89, 1.87
b) 15.32, 15.23, 13.52, 12.53
6. a) 2500 b) 3900
7. 50278
8. 26230
9. 3652
10. 4685
11. 11848
12. €4960
13. 23, 47
14. 15, 81
15. a) 1, 2, 3, 4, 6, 8, 12, 24
b) 1, 2, 3, 5, 6, 10, 15, 30
16. a) 1, 2, 4, 8
b) 1, 2, 3, 6
17. a) 154 mins
b) 209 mins
18. a) 9:04pm
b) 12:16am
19. 10 hrs 39 mins
20. 1 hr 36 mins
21. 6:24pm
22. a) Oblique
b) Vertical
23. a) Acute
b) Obtuse
24. a) Reflex b) Straight
25. a) 90° b) 180°
26. Teacher check
27. a) – b) x
28. a) 143 b) 15
29. a) False b) True
30. Teacher check
31. a) $\frac{30}{36}$ b) $\frac{49}{63}$
32. Any 4-sided shape
33. Teacher check
34. a) Isosceles triangle
b) Equilateral triangle
35. a)



b)



36. Teacher check

37. a) 11910 b) 17192
38. a) 6696 b) 6144
39. a) 26 b) 26
40. a) 357 b) 277
41. a) 8 b) 7
42. a) 8 b) 9
43. a) 26 b) 59
44. 1536
45. €5
46. a) 10000 b) 10000
47. a) 70 b) $\frac{5}{100}$
48. Teacher check
49. a) 279 secs b) 473 secs
50. 3:35pm

Easter

1. 19, 31
2. a) 16 b) 64
3. a) 121 b) 225
4. a) $\frac{3}{6}$ b) $\frac{7}{10}$
5. a) $\frac{11}{12}$ b) $\frac{13}{24}$
6. $\frac{7}{10}$ m
7. a) $\frac{1}{5}$ b) $\frac{5}{12}$
8. a) $\frac{7}{12}$ b) $\frac{1}{18}$
9. $\frac{2}{15}$ m
10. a) 2 in 5 chance
b) 1 in 5 chance
11. a) 2 in 6 or 1 in 3
b) 26 in 52 or 1 in 2
12. a) $5\frac{7}{12}$ b) $9\frac{9}{10}$
13. a) $3\frac{7}{12}$ b) $4\frac{11}{24}$
14. $3\frac{7}{15}$ m
15. a) $4\frac{7}{20}$ b) $3\frac{13}{18}$
16. a) $1\frac{19}{24}$ b) $1\frac{11}{15}$
17. $1\frac{5}{12}$ km
18. Teacher check
19. a) 38cm b) 54cm
20. a) 26cm b) 29.5cm
21. Teacher check
22. a) €0.39 b) €0.08
23. a) 0.037 b) 0.914
24. a) 8.1 b) 1.38
25. a) 0.6 b) 0.125

26. a) 54.691 b) 91.98
27. a) 4.466 b) 2.481
28. a) 625.53 b) 277.352
29. a) 2.9 b) 0.48
30. a) 347.9 b) 2857
31. a) 1.39 b) 4.758
32. a) 118 b) 134
33. a) 34 b) 8
34. a) 3 b) 6
35. a) 66 b) 4
36. a) 6099 b) 978
37. a) 1365 b) 9159
38. a) 3646 b) 6047
39. a) Add 25 b) Subtract 14
40. 45, 42
41. a) 0.37m b) 3.9cm
42. a) 2047m b) 509cm
43. a) 753m b) 3750m
44. a) 6.016km b) 6.644km
45. a) 1.23m b) 5.33m
46. a) 64.6cm b) 127.4cm
47. a) 0.079km b) 0.057km
48. a) 35cm b) 115m
49. €111
50. €98

Summer

1. a) 41082 b) 39982
2. a) 15000 b) 30000
3. 35023
4. 7467
5. a) 1, 2, 3, 6, 9, 18
b) 1, 2, 4, 7, 14, 28
6. a) 1, 2, 3, 6 b) 1, 2, 4
7. 7 hrs 31 mins
8. 3 hrs 17 mins
9. a) Acute b) Obtuse
10. Teacher check
11. a) 345 b) 26
12. a) True b) False
13. a) $\frac{16}{40}$ b) $\frac{48}{56}$
14. a) 5282 b) 5208
15. a) 47 b) 39
16. 23, 47
17. a) 81 b) 256
18. a) $\frac{11}{15}$ b) $1\frac{7}{12}$
19. a) $\frac{13}{18}$ b) $\frac{1}{12}$
20. a) $2\frac{17}{24}$ b) $4\frac{7}{10}$
21. a) $3\frac{7}{12}$ b) $2\frac{9}{20}$



22. a) 38cm b) 38cm
 23. a) 0.029 b) 0.364
 24. a) 0.8 b) 0.375
 25. a) 89.54 b) 13.572
 26. a) 986.4 b) 0.37
 27. a) 104 b) 140
 28. a) 60 b) 6
 29. a) 1356 b) 14738
 30. a) 2.078km b) 3.9cm
 31. a) 6.016km b) 2.664km
 32. a) 51.8cm b) 335.24m

33. a) 24cm b) 115m
 34. a) -5°C b) -4°C
 35. €111
 36. a) €2151 b) €660
 37. a) $\frac{13}{20}$ b) $\frac{7}{10}$
 38. a) 55% b) 34%
 39. €322
 40. €255.50
 41. 888cm^2 , 19cm
 42. a) 4.027kg b) 1kg 9g

43. a) 9.561kg b) 3.834kg
 44. a) 86.08kg b) 3.6kg
 45. Teacher check
 46. Teacher check
 47. a) 38 b) 168g
 48. a) 7.056l b) 6750ml
 49. a) $\frac{76}{100}$ or $\frac{19}{25}$
 b) $\frac{26}{100}$ or $\frac{13}{50}$
 50. a) €219 b) €224