Practice Book CoEA2 Answers

8 Number Concepts 2

8.1 Place Value

1. (a) 23 (b) 167 (c) 2345 (d) 79 (e) 513 (f) 8934
   (g) 506 (h) 9011 (i) 25 631 (j) 18 064 (k) 122 619 (l) 3 000 000

2. (a) thirty nine (b) two hundred and eighty six
   (c) five thousand three hundred and sixty two (d) forty seven
   (e) six hundred and sixteen (f) seven thousand two hundred and eighty two
   (g) seven hundred and eight (h) six thousand and twenty one
   (i) three thousand and seven (j) twenty thousand three hundred and six
   (k) fifty thousand two hundred and eight (l) two million
   (m) three hundred and sixty thousand
   (n) five hundred and twenty three thousand one hundred and seventy six

3. (a) 138, 831 (b) 278, 872 (c) 1456, 6541
   (d) 1159, 9511 (e) 12 348, 84 321 (f) 12 789, 98721
   (g) 134 689, 986 431 (h) 122 678, 876 221
   (i) 4 567 789, 9 877 654 (j) 122 347, 743 221

4. (a) 16, 27, 35, 42, 98 (b) 78, 96, 108, 320, 906
   (c) 565, 5001, 5020, 5232, 50 023
   (d) 70 201, 76 097, 76 231, 76 621, 700 370
   (e) 66, 101, 606, 1001, 10 001

5. (a) 50 (b) 5 (c) 5000 (d) 5000
   (e) 5 (f) 50 000 (g) 50 000 (h) 500
   (i) 500 (j) 50 000 (k) 5 (l) 5 000 000

6. £900, £563, £370, £307, £206, £125, £66, £26

7. (a) 98 775 (b) 11 223

8.2 Rounding Numbers

1. (a) 20 (b) 40 (c) 10 (d) 90
   (e) 80 (f) 70 (g) 50 (h) 120
   (i) 380 (j) 1270 (k) 4790 (l) 2440
   (m) 72 170 (n) 31 220 (o) 55 560 (p) 100 210

2. (a) 700 (b) 400 (c) 600 (d) 800
   (e) 100 (f) 1200 (g) 3900 (h) 3900
   (i) 20 400 (j) 71 000 (k) 100 200 (l) 333 300

3. (a) 12 000 (b) 9000 (c) 37 000
   (d) 19 000 (e) 7000 (f) 10 000
   (g) 700 (h) 53 000 (i) 18 000

4. (a) 80 (b) 110 (c) 70 (d) 130 (e) 100 (f) 110
   (a) 86; 90 (b) 108; 110 (c) 62; 60 (d) 129; 130 (e) 99; 100 (f) 108; 110
   In (a) and (c), the order of rounding has made a difference. Rounding at the *end* of a calculation will always be more accurate.

8.3 Whole Number: Addition

1. (a) 47 (b) 79 (c) 89 (d) 99 (e) 31 (f) 74
2. (a) 71 (b) 55 (c) 102 (d) 91 (e) 110 (f) 82
3. (a) 251 (b) 477 (c) 137 (d) 260 (e) 591 (f) 121
4. (a) 741 (b) 860 (c) 990 (d) 177 (e) 801 (f) 211
5. (a) 977 (b) 329 (c) 529 (d) 861 (e) 935 (f) 600
6. (a) 793 (b) 780 (c) 514 (d) 1062 (e) 987 (f) 1070
7. (a) 1146 (b) 1179 (c) 1135 (d) 1035 (e) 1185 (f) 1280
8. (a) $17 + 12 = 29$
   (b) $42 + 74 = 116$
   (c) $52 + 52 = 104$
   (d) $23 + 51 = 74$
   (e) $124 + 368 = 492$
   (f) $124 + 128 = 252$
   (g) $219 + 204 = 423$
   (h) $544 + 278 = 822$
   (i) $328 + 542 = 870$
   (j) $148 + 784 = 932$
   (k) $428 + 843 = 1271$
   (l) $731 + 572 = 1303$
9. (a) 109 (b) 106 (c) 164 (d) 54 (e) 215 (f) 115
10. (a) 229 (b) 1095 (c) 1043 (d) 942 (e) 893 (f) 1910
    (g) 2125 (h) 251 (i) 874 (j) 798 (k) 1244 (l) 1377
    (m) 1457 (n) 1846 (o) 1442

8.4 Whole Number: Subtraction

1. (a) 31 (b) 33 (c) 14 (d) 10 (e) 4 (f) 11
2. (a) 76 (b) 67 (c) 36 (d) 89 (e) 57 (f) 49
3. (a) 37 (b) 59 (c) 9 (d) 47 (e) 44 (f) 28
4. (a) 35 (b) 20 (c) 25 (d) 223 (e) 705 (f) 122
5. (a) 943 (b) 417 (c) 411 (d) 909 (e) 348 (f) 95
6. (a) 324 (b) 73 (c) 209 (d) 429 (e) 235 (f) 181
7. (a) 60 (b) 164 (c) 48 (d) 249 (e) 379 (f) 267
8. (a) $72 - 29 = 43$
   (b) $144 - 78 = 66$
   (c) $58 - 27 = 31$
   (d) $121 - 94 = 27$
   (e) $948 - 278 = 670$
   (f) $371 - 258 = 113$
   (g) $270 - 97 = 173$; no, since £180 > £173
   (h) $328 - 172 = 156$
   (i) $921 - 738 = 183$
   (j) $373 - 159 = 214$ i.e. £214
   (k) $700 - 384 = 316$
   (l) $734 - 483 = 251$ girls
9. (a) 32 (b) 61 (c) 70 (d) 143 (e) 429 (f) 337
   (g) 531 (h) 454 (i) 38 (j) 83 (k) 32 (l) 256
   (m) 388 (n) 577 (o) 865 (p) 141 (q) 512 (r) 169
   (s) 650 (t) 384 (u) 114 (v) 829 (w) 189 (x) 59

8.5 Whole Number: Multiplication

1. (a) 39 (b) 48 (c) 28 (d) 26 (e) 105 (f) 69
2. (a) 64 (b) 85 (c) 144 (d) 114 (e) 164 (f) 230
3. (a) 368 (b) 357 (c) 189 (d) 98 (e) 432 (f) 165
4. (a) 240 (b) 560 (c) 150 (d) 120 (e) 450 (f) 280
5. (a) 456 (b) 343 (c) 290 (d) 282 (e) 448 (f) 424
6. (a) 497 (b) 342 (c) 432 (d) 448 (e) 279 (f) 352
7. (a) 644 (b) 688 (c) 756 (d) 539 (e) 882 (f) 525

8. (a) $72 \times 6 = 432$ i.e. 432 oranges (b) $52 \times 8 = 416$ i.e. 416 passengers
   (c) $36 \times 8 = 288$ i.e. 288 miles (d) $17 \times 9 = 153$ i.e. £153
   (e) $36 \times 9 = 324$ i.e. £3.24 (f) $43 \times 8 = 344$ i.e. 344 plants
   (g) $18 \times 5 = 90$ i.e. 90 bottles (h) $93 \times 3 = 279$ i.e. 279 points
   (i) $23 \times 4 = 92$ i.e 92 runs (j) $73 \times 6 = 438$ i.e. 438 pints
   (k) $33 \times 7 = 231$ i.e. 231 miles (l) $22 \times 6 = 132$ i.e. 132 tons
   (m) $428 \times 9 = 3852$ i.e. £38.52

9. (a) 42 (b) 84 (c) 76 (d) 170 (e) 189 (f) 374
   (g) 364 (h) 392 (i) 576 (j) 465 (k) 252 (l) 112
   (m) 108 (n) 243 (o) 328 (p) 63 (q) 98 (r) 279
   (s) 288 (t) 250 (u) 175 (v) 318 (w) 180 (x) 472

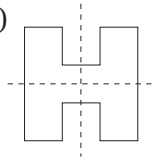
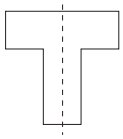
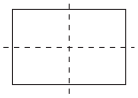
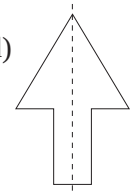
8.6 Whole Number: Division

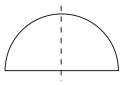
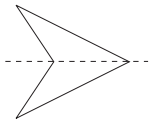
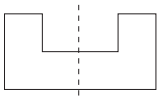
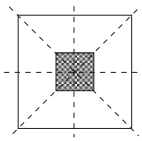
1. (a) 5 (b) 5 (c) 4 (d) 10 (e) 4 (f) 5
2. (a) 6 (b) 6 (c) 4 (d) 7 (e) 5 (f) 5
3. (a) 6 (b) 10 (c) 7 (d) 9 (e) 7 (f) 3
4. (a) 4 (b) 8 (c) 7 (d) 10 (e) 6 (f) 5
5. (a) 3 (b) 4 (c) 8 (d) 8 (e) 3 (f) 7
6. (a) 7 (b) 20 (c) 9 (d) 7 (e) 4 (f) 18
7. (a) 10 (b) 20 (c) 11 (d) 9 (e) 22 (f) 32
8. (a) $21 \div 3 = 7$ i.e. £7
   (b) $44 \div 4 = 11$ i.e. 11 cars
   (c) (i) $24 \div 4 = 6$ (ii) $24 \div 8 = 3$ (iii) $24 \div 6 = 4$
   (d) $40 \div 5 = 8$ i.e. 8 sweets
   (e) $45 \div 5 = 9$ i.e. £9
   (f) $68 \div 9 = 7$ remainder 5 (i) 7 (ii) 5
   (g) $56 \div 8 = 7$ i.e. £7
   (h) $32 \div 8 = 4$ i.e. 4 piles
   (i) $92 \div 6 = 15$ remainder 2 (i) 15 (ii) 2
   (j) $84 \div 6 = 14$ i.e. 14 boxes
   (k) $210 \div 7 = 30$ i.e. 30 pupils

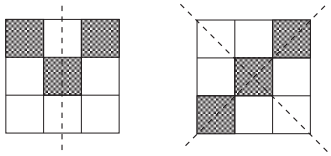
9. (a) 7 (b) 17 (c) 15 (d) 28 (e) 14 (f) 24 (g) 17
   (h) 19 (i) 17 (j) 11 (k) 9 (l) 18 (m) 12 (n) 31
   (o) 16 (p) 6 (q) 14 (r) 45 (s) 26 (t) 9 (u) 7

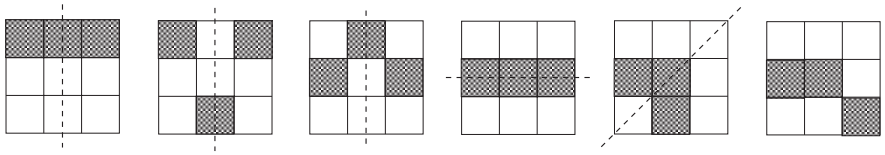
9 Symmetry and Congruence

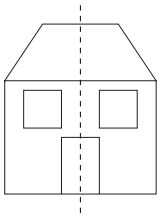
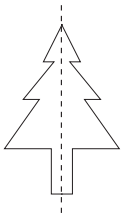
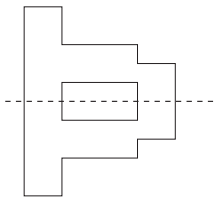
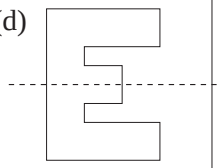
9.1 Symmetry

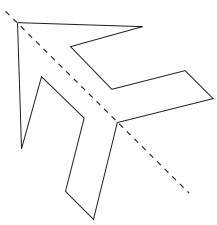
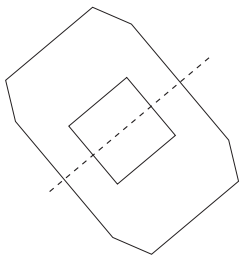
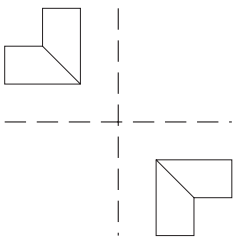
1. (a)  (b)  (c)  (d) 

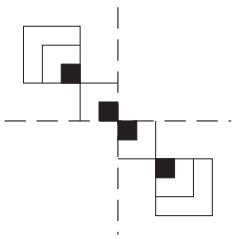
(e)  (f)  (g)  (h) 

2. (a) 

(b) 

3. (a)  (b)  (c)  (d) 

(e)  (f)  (g) 

(h) 

9.2 Congruency

1. A and E, C and G

2. A and J, B and L, D and O, F and N, H and P, M and R,
   C and I, E and K, G and Q

3. (a) A (it is a square)
   (b) A (the others are identical without reflection)
   (c) B (the others are identical without reflection)
   (d) C

10 Data Analysis 2

10.1 Sorting and Classifying Objects

1.

Sports which	*are played in teams*	*have individual competitors*
use a ball	Netball Cricket Football Hockey Rugby	Tennis Snooker
do not use a ball		Swimming Boxing Running Cycling Archery Wrestling

Sports which

Rowing is a sport which does not involve a ball, and which can be an individual or a team event.

2. (a)

	EVEN	*ODD*
PRIME	2	3 5 7
Not PRIME	4 6 8	9

(b)

	EVEN	*ODD*
PRIME		11 13 17 19
Not PRIME	10 12 14 16 18	15

3.

	Age	
	13 or less	*14 or more*
Female	Gwen Jill Jane	Mary Sarah
Male	John	Harry Justin Tom Tim

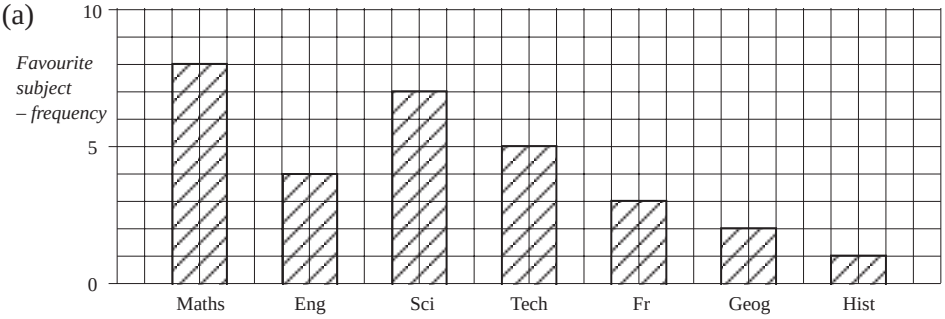
4.

Shape	*Tally*	*Frequency*
▩	𝍸 |	6
□	||||	4
●	𝍸 ||	7
○	𝍸 |||	8
	Total	25

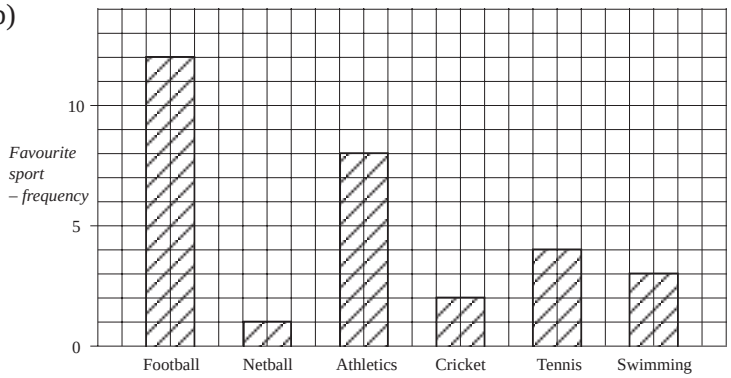
	Shaded	*White*
Square	6	4
Circle	7	8

10.2 Bar Charts

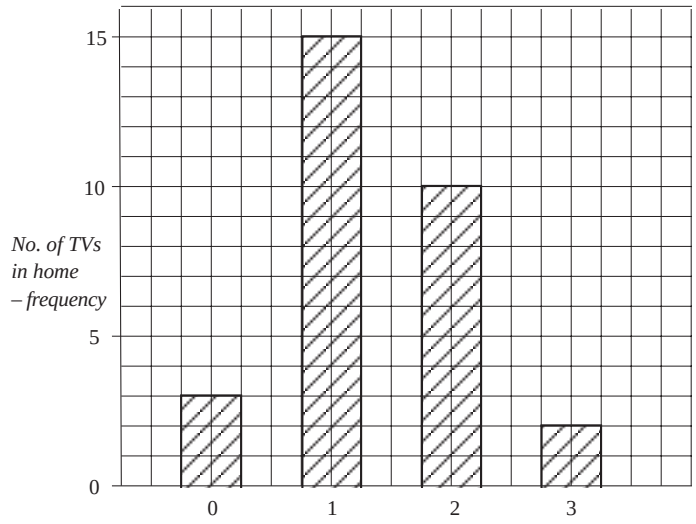
1. (a)



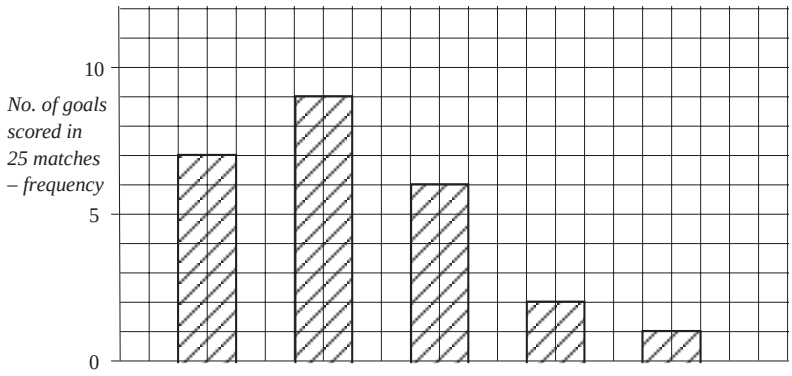
(b)



(c)



(d)



2. (a) Friday (b) Wednesday (c) $10 - 4 = 6$

3. (a) Thursday (b) Wednesday (c) Tuesday (d) Friday

10.3 Interpreting Simple Line Graphs

1. (a) 4 (b) Sunday (c) Wednesday (d) Tuesday and Saturday

2. (a) N (b) $7 + 8 + 7 + 6 = 28$ (c) $1 + 1 + 3 + 4 + 6 + 7 = 22$

3. (a) (i) 7 (ii) $7 + 5 + 4 + 4 = 20$ (b) 9-10 (c) 13-14

11 Chance

11.1 Describing Probabilities

1. (a) impossible (b) unlikely or impossible (c) unlikely or likely
   (d) unlikely (e) likely (?) (f) certain (g) ?

2. no chance, poor chance, even chance, good chance, certain

3. (a) unlikely (or no chance if you don't buy a ticket!)
   (e) certain
   (f) unlikely

4. (a) could (b) could (at the moment!) (c) will not (at the moment)
   (d) will (e) could (f) will

12 Number Concepts 3

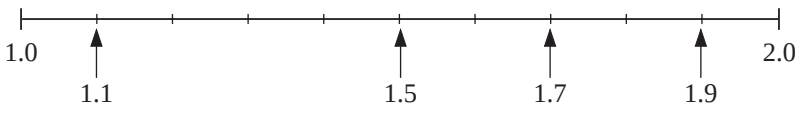
12.1 Place Value

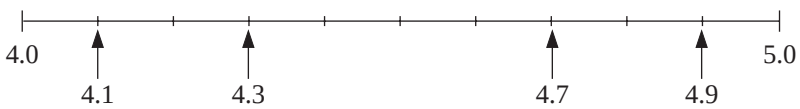
1. (a) 5.3 (b) 7.25 (c) 25.3
   (d) 50.34 (e) 3.742 (f) 1.305

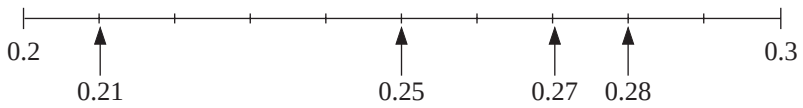
2. (a) 2 hundredths (b) 2 tenths (c) 2 thousandths (d) 2 hundredths

3. (a) 23.5 (b) 62.4 (c) 116.2 (d) 574.6 (e) 207.3
   (f) 39.27 (g) 41.86 (h) 5.29 (i) 18.88 (j) 300.62
   (k) 507.57 (l) 6.08 (m) 9.05 (n) 23.07 (o) 64.09
   (p) 50.06 (q) 806.01 (r) 0.67 (s) 0.05 (t) 1.007

4. (a) three point seven (b) six point nine (c) seventeen point four
   (d) twenty eight point two (e) three point two eight
   (f) eight point four five (g) twelve point one four
   (h) seventy one point eight three (i) twenty point one
   (j) six point nought two (k) fifteen point nought three
   (l) nought point seven (m) nought point nought seven
   (n) ten point one nought (o) three point three three

5. 

6. 

7. 

8. (a) 4.19, 4.2, 4.25, 4.5, 4.52
   (b) 0.09, 0.19, 0.57, 0.6, 0.61
   (c) 6.79, 10.9, 11.08, 11.7, 12.5

9. (a) 2.5 (b) 5.8 (c) 0.7

10. (a) 5.68 (b) 0.51 (c) 8.38

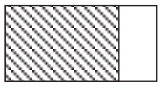
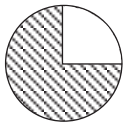
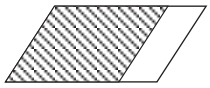
12.2 Money Calculations

1. £10.80; £9.20
2. £2.45; £2.55
3. £1.75
4. £10.80
5. £3.85
6. £48.10
7. £3.12
8. £5.07
9. £5.67, £17.75, £20.50, £27.09, £102

12.3 Fractions of Quantities

1. (a) 10 (b) 4 (c) 12 (d) 9 (e) 15 (f) 11 (g) 2 (h) 15
   (i) 6 (j) 25 (k) 6 (l) 30 (m) 16 (n) 8 (o) 24

2. (a) £3 (b) £3 (c) 5 kg (d) £9 (e) 40p (f) 15 cm
   (g) £12.50 (h) 60 m (i) 5 kg (j) 250 g (k) 150 m
   (l) 10p (m) £6.25 (n) £17.50 (o) 45 kg (p) 125 cm
   (q) 75p (r) 50p

3. (a)  (b)  (c) 

4. (a) 200 (b) 300

5. (a) 250 (b) 25 (c) 75 (d) 50 (e) 300 (f) 300
   (g) 375 (h) 100 (i) 125 (j) 150 (k) 600 (l) 130
   (m) 200 (n) 350 (o) 450

6. (a) 150 (b) 225

7. (a) 375 (b) 250

12.4 Negative Numbers

1. (a) 3 (b) 0 (c) 3 (d) – 2
   (e) 8 (f) 5 (g) 5 (h) 9

2. (a) – 3 (b) – 5 (c) – 4 (d) 1
   (e) – 8 (f) – 8 (g) – 4 (h) – 6

3. (a) 0 (b) – 4 (c) 3 (d) – 3
   (e) – 1 (f) – 6 (g) – 3 (h) – 6

4. (a) Moscow (b) Frankfurt (c) 25 °C
   (d) (i) 17 °C (ii) 13 °C (iii) 7 °C (iv) 8 °C

5. −15 °C

6. (a) 7 (b) 1 (c) 22 (d) 2

13 Angles and Compass Directions

13.1 Angles

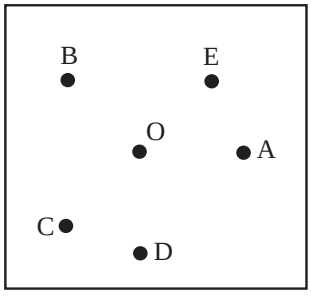
1. (a) acute (b) right (c) obtuse (d) right (e) acute
   (f) right (g) obtuse (h) acute (i) acute (j) right
   (k) obtuse (l) acute

3.

	acute	*right*	*obtuse*
(a)	2	1	0
(b)	0	4	0
(c)	2	0	2
(d)	2	1	1
(e)	2	0	2
(f)	0	0	6
(g)	2	0	2
(h)	0	4	0
(i)	4	0	4

13.2 Compass Directions

1. (a) Lucy (b) Jill (c) Ann (d) John
   (e) N (f) SW (g) NW (h) NE (i) S (j) SE

2. 

14 Number Machines 1

14.1 Equations

1. (a) 5 (b) 6 (c) 9 (d) 6 (e) 10

2. (a) 8 (b) 5 (c) 6 (d) 10 (e) 7 (f) 8

14.2 Simple Machines

1.

Number in	*Number out*
3	10
7	14
6	13
10	17
21	28

2.

12	16
17	21
13	17
17	21

3.

7	4
8	5
20	17
24	21

4.

13	7
18	12
45	39
53	47

5.

2	8
5	20
7	28
9	36

6.

4	20
6	30
8	40
9	45

7.

12	4
18	6
15	5
27	9

15 Weighing, Measuring, Time

15.1 Capacity

1. (a) millilitres (b) litres (c) litres (d) millilitres

2. (a) 2000 (b) 5000 (c) 500 (d) 1500
   (e) 10 000 (f) 250

3. (a) 6 litres (b) 3 litres (c) $2\frac{1}{2}$ litres (d) $\frac{3}{4}$ litre
   (e) $4\frac{1}{2}$ litres (f) $7\frac{1}{2}$ litres

15.2 Metric Measures of Length

1. A: 5 cm B: 3 cm C: $7\frac{1}{2}$ cm D: 8 cm

2. A: 4 cm B: 6 cm C: $5\frac{1}{2}$ cm D: $6\frac{1}{2}$ cm E: 8 cm F: 6 cm

4. (a) 5 cm by 3 cm (b) $4\frac{1}{2}$ cm by $2\frac{1}{2}$ cm (c) $3\frac{1}{2}$ cm by 3 cm
   (d) $7\frac{1}{2}$ cm by 2 cm

6. (a) A: 11 cm B: $13\frac{1}{2}$ cm C: $15\frac{1}{2}$ cm
   (b) D: 52 cm E: 56 cm F: 62 cm G: 65 cm
   (c) H: 120 cm I: 160 cm J: 210 cm K: 240 cm

15.3 Reading Scales

1. (a) A: 2 B: 4.5 C: 8.5
   (b) D: 0.3 E: 0.8
   (c) F: 20 G: 55 H: 90
   (d) I: 140 J: 280 K: 420

2. (a) 75 mph (b) 45 mph (c) 90 mph (d) 55 mph

3. (a) A: 280 B: 420 C: 460 D: 570
   (b) E: 55 F: 70 G: 95 H: 130
   (c) I: 0.3 J: 0.65

4. (a) A: 1 kg B: 2.5 kg
   (b) C: 5.2 kg D: 6.6 kg E: 8.1 kg
   (c) F: 6.33 kg G: 6.39 kg H: 6.45 kg
   (d) I: 0.8 kg J: 2.6 kg K: 3.4 kg

15.4 Clock Reading

1, (a) minutes (or hours) (b) seconds (c) hours
(d) minutes (or hours) (e) days

2. (a) 120 minutes (b) 180 seconds (c) 2 minutes
(d) 96 hours (e) $2\frac{1}{2}$ hours (f) $1\frac{1}{2}$ minutes
(g) 3600 seconds (h) 1440 minutes (i) 86 400 seconds

3. (a) 10.30 (b) 9.45 (c) 3.15
(d) 5.30 (e) 7.20 (f) 8.40
(g) 10.10 (h) 12.35 (i) 9.55

4. (a) five past three (b) quarter to eight (c) ten to ten
(d) twenty past six (e) twenty five to nine (f) ten past seven

Miscellaneous Exercises

1. (a) 706 (b) John

2. £1.72
£2.07
£3.79

3. (a) 7800 (b) 8000

4. (a) 14 °C (b) 8 °C

5. £92, £8

6. (a) 42 (b) 5

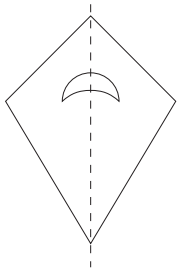
7. (a) 12 (b) 5 (c) 6 (d) 2

8. (a) 200 (b) 100 (c) 100

9. (a) 8 (b) $\frac{1}{4}\left(=\frac{2}{8}\right)$ (c) $\frac{1}{2}\left(=\frac{4}{8}\right)$

10. (a) 3.08, 3.21, 3.76, 3.89 (b) -3, -10, -11, -15, -24

11. B



12. 580 mm

13. (a) NE (b) NW (c) south

14. (a) A and G (b) B, E and I (c) 4

15. acute: c and d, right: a, obtuse: b

16.

	Shape with all edges straight	*Shape with some edges curved*
Shaded	D E	C G H J
Not shaded	A F I	B

17. (a) could happen
    (b) will not happen
    (c) will happen
    (d) could happen

18. (a) Sat (b) Tues and Thurs (c) 3 (d) Wed