Answer Key Chapter 12

Student book

Check In

a mm, cm, m, km   b g, kg, t   c ml, l

Exercise 12A

1 a 310 m   b 2 days   c 68 l d 4.3 km
   e 700 kg   f 5 hours   g 50 cm   h 16 000 ml
   i 800 g

2

			¹5	6
			6	
	²1	7	0	
	3			
³3	7	5		
2				
5				

3 a 30 000 cm²   b 1 700 000 m²
   c 2 600 000 cm³   d 99 m²
   e 6 m²

Exercise 12B

1 a 3:4   b 7:5   c 2:8:5   d 1:2
   e 4:1   f 2:7:9   g 1:3   h 7:10:4

2 a 3:6:7   b 5:5:6   c 1:1:1

3 18:27, 2:3
   22:77, 200:700
   34:51, 4:6
   95:38, 15:6
   2.1:4.2:7, 12:24:40

4 Right-angled

5 He has not fully simplified. The answer should be 1:2:15

6 a 1:14   b 7:2   c 10:13:7
   d 70:41   e 3:4:1

7 a 1:20   b 11:1   c 3:5:1
   d 24:45:40   e 2:3:1

Exercise 12C

1 a 5 kg bag   b no, units are not equal
   c 5000 g   d 1:50

2 a 1:6   b 64:15

3 a 110:57   b 10:1   c 13:18   d 1:10
   e 1200:311   f 15:2   g 7:22   h 5:36

4 a 60:13   b 7:4   c 8:15   d 49:50   e 2:1

5 All are incorrect, correct working is:

a	3 g : 3000 g	divide by 3	1:1000
b	17 cm : 85 cm	divide by 17	1:5
c	1000 cm : 70 cm	divide by 10	100:7
d	150 ml : 50 ml	divide by 50	3:1

6 a 2:1   b 1:4   c 2:25   d 10:3

Exercise 12D

1 a Ria 2, Faith 3   b 6

2 a 20, 5 and 35 nuts   b 20, 50 and 30 ml
   c 40 m, 10 m and 25 m   d 0.2 m, 1.4 m and 0.2 m
   e $1.25, $17.50 and $6.25   f $16, $10 and $28
   g $8, $16 and $76   h 585 kg, 310 kg and 105 kg

3 a segments : 4 cm, 2 cm, 6 cm
   b segments : 1.6 cm, 3.2 cm, 2.4 cm

4 a 90 g, 510 g, 300 g   b $1.75, $1.75 and $21
   c 975 g, 150 g and 375 g

5 36°, 60° and 84°

6 24°, 144°, 72° and 120°

7 a 6 and 9   b 5 and 10

Exercise 12E

1 No, she gets $\frac{2}{5}$

2 a $\frac{13}{40}$ **b** 67.5% **c** No. It must be a multiple of 40 but not necessarily the first multiple of 40

3 3:7

4 $\frac{4}{7}$

5 a Ida has about 26% yellow, Elin has about 25% so Ida has the greatest proportion of yellow counters.
b Percentage

6 A has about 61% red, B has 64% red. So B is darker.

7 No, box A has a mass of 125 g, B has a mass of 124 g

8 a A clear glass holds 435 ml, a coloured glass holds 425 ml. So a clear glass holds more.
b The maximum possible amount of water was put into each glass.

9 The largest angle in triangle A is 82.5°. The largest angle in triangle B is 90°. So B has the largest angle.

10 Bag B has the greater proportion of black balls – it may not have a greater number of black balls.

11

Line	Real length	Guess	Percentage error	Most or least accurate
A	5.4 cm	5.2 cm	3.7%	a most accurate
B	6 cm	6.3 cm	5%	
C	3.5 cm	3.1 cm	11.4%	b least accurate
D	8.2 cm	8.6 cm	4.9%	

12 30

Investigation

12, 24, 36 and 48 are all 1.75 times as big when the digits are reversed. It is not possible to find a two-digit number that is 1.5 times as big.

Exercise 12

1 a 2:1 **b** 20:3 **c** 1:12 **d** 39:10
e 1:80 **f** 9:200 000

2 a 1:10:100 **b** 9:10 **c** 5:1:3 **d** 1:25:3
e 23:7 **f** 7:5:9

3 a 18 cm; 12 cm **b** 180 g; 150 g; 90 g
c 600 ml; 1200 ml; 900 ml **d** 24 mins; 56 mins; 40 mins

4 600

5 a $\frac{1}{2}$ **b** 31.25%

6 250 ml pineapple juice, 150 ml orange juice, 200 ml mango

7 Paint B

8 a 2750 ml **b** 8

9 a i False; **b** He hits 11.5 times as many serves in as he hits out
ii definitely true
iii False; **b** For every 2 of his serves that were out, 23 were in
iv false; **b** $\frac{2}{25}$ of his shots are served out
v could be true

Summary
Check out

1 a 4:3 **b** 5:4 **c** 15:1
2 a 2:3 **b** 2:5 **c** 8:3:11 **d** 8:3:7
e 9:2
3 a $32, $8 and $40 **b** $50 and $30
c $8 and $72 **d** $32, $28 and $20
e $16, $16 and $48 **f** $12, $20 and $48
4 Dmitry has 65.2%. Tamar has 65%. So Dmitry has greater proportion of bags.

Answer Key Chapter 12

Homework book

12A

1 a 58 b 96 c 4 d 9
   e 700 f 2600 g 7.8 h 350000
   i 2880

2 11

3 a 20000 b 5000000 c 5700000 d 5200000
   e 9100 f 43 g 0.46 h 7
   i 32

12B–12C

1 a 9:14 b 7:6 c 2:3 d 2:5
   e 7:1 f 3:2 g 2:5 h 6:7
   i 2:3:4 j 5:2:1 k 8:3:5 l 8:1:5

2 a 3:20 b 4:25 c 70:13 d 23:42
   e 6:3:7 f 1:8:3 g 3:2:10 h 11:16:5

3 a 1:12 b 24:1 c 24:5 d 6:5
   e 16:3:5 f 6:4:3

4 a The 5kg bag b 10:1

5 a 5:13 b 14:1 c 1:4 d 6:1
   e 25:3 f 13:4 g 4:1 h 80:11
   i 3:2

6 a 1:10000 b 130:27
   c 6000:1 d 50000:1
   e 56:1

12D

1 a $80, $40 b 300cm, 450cm
   c 1.14kg, 2.28kg d 28 minutes, 20 minutes

2 a 108 minutes, 12 minutes b 4 days, 10 days
   c 350ml, 250ml d 3m, 4.5m

3 a $17, $34, $51 b 27kg, 45kg, 18kg
   c 5.6m, 11.2m, 39.2m d 200g, 250g, 300g

4 100°, 60°, 20°

5 a Isosceles b 1:1:1

6 102 and 126

12E

1 198 people

2 570 females

3 72cm

4 28 years old

5 2:3

6 3:2

7 Paint A 1:3.5, Paint 1:2.7, so Paint B

8 a 32 b $260