Unit 12: Decimals

Lesson 1: Adding and subtracting decimals (1)

➜ pages 6–8

1. a) 0·9 c) 0·7
b) 0·9 d) 1·0

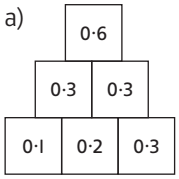
2. a) 0·9 – 0·5 = 0·4
b) 0·9 – 0·2 = 0·7

3. 0·8 = 0·1 + 0·7
Check parts on other models total 0·8.

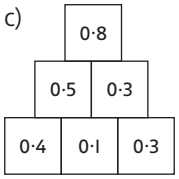
4. a) 0·8 e) 0·6 i) 1 (or 1·0)
b) 0·8 f) 0·5 j) 0
c) 0·3 g) 0·9
d) 0·4 h) 0·6

5. a) 1 (or 1·0) d) 0·8
b) 0·4 e) 0·5
c) 0·9 f) 0·8

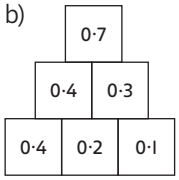
6. a)



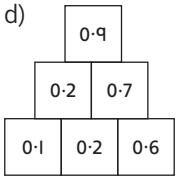
c)



b)

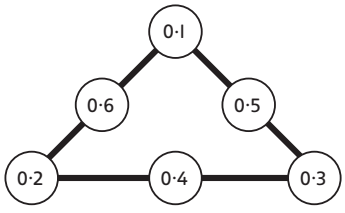


d)



7. Answers will vary for pairs of ▲ and ◆; for example:
▲ = 0·4 ◆ = 0·1
▲ = 0·5 ◆ = 0·2
▲ = 0·6 ◆ = 0·3
▲ = 0·7 ◆ = 0·4
▲ = 0·8 ◆ = 0·5
▲ = 0·9 ◆ = 0·6
▲ = 0·46 ◆ = 0·16
▲ = 0·55 ◆ = 0·25

8. Arrangements will vary; for example:



Reflect

Emma ignored the place value of the digits and added the tenths and ones together, she needs to add the tenths and tenths and the ones and ones, i.e.

O	•	Tth
0	•	4
1	•	0

0·4 + 1 = 1·4

Lesson 2: Adding and subtracting decimals (2)

➜ pages 9–11

1. a) 0·36 l + 0·22 l = 0·58 l

	O	·	Tth	Hth
	0	·	3	6
+	0	·	2	2
	0	·	5	8

b) 0·25 l + 0·47 l = 0·72 l

	O	·	Tth	Hth
	0	·	2	5
+	0	·	4	7
	0	·	7	2
			1	

c) 0·55 + 0·31 = 0·86

	O	·	Tth	Hth
	0	·	5	5
+	0	·	3	1
	0	·	8	6

d) 0·38 + 0·38 = 0·76

	O	·	Tth	Hth
	0	·	3	8
+	0	·	3	8
	0	·	7	6
			1	

2. Kate has put the 5 from 0·05 in the wrong column (tenths instead of hundredths). The correct answer is:

	O	·	Tth	Hth
	0	·	0	5
+	0	·	1	2
	0	·	1	7

3. 0·65 – 0·34 km = 0·31 km

	O	·	Tth	Hth
	0	·	6	5
–	0	·	3	4
	0	·	3	1

4. a) 0·92 – 0·58 = 0·34

	O	·	Tth	Hth
	0	·	$^{8}\not{9}$	$^{1}2$
–	0	·	5	8
	0	·	3	4

b) 0·49 – 0·19 = 0·30

	O	·	Tth	Hth
	0	·	4	9
–	0	·	1	9
	0	·	3	0

c) 0·71 – 0·24 = 0·47

	O	·	Tth	Hth
	0	·	$^{6}\not{7}$	$^{1}1$
–	0	·	2	4
	0	·	4	7

d) 0·60 – 0·45 = 0·15

	O	·	Tth	Hth
	0	·	$^{5}\not{6}$	$^{1}0$
–	0	·	4	5
	0	·	1	6

5. a) 0·32 b) 1·02 c) 0·19

6. 0·15 + 0·57 = 0·72 or 0·72 – 0·15 = 0·57

7. a) Calculations will vary but total should be 0·99; for example:

	O	·	Tth	Hth
	0	·	8	7
+	0	·	1	2
	0	·	9	9

b) For decimals with 2 dp:

	O	·	Tth	Hth
	0	·	9	8
–	0	·	1	2
	0	·	8	6

Alternatively, accept 3 dp:

	O	·	Tth	Hth	Thth
	0	·	9	8	7
–	0	·	1		
	0	·	8	8	7

Reflect

If Alex works out 37 + 59 = 96, then she can use this to work out the answer to 0·37 + 0·59 as follows:

0·37 + 0·59 = 37 hundredths + 59 hundredths = 96 hundredths = 0·96

Lesson 3: Adding and subtracting decimals (3)

➜ pages 12–14

1. a) 0·8 + 0·2 = 1
b) 0·69 + 0·31 = 1

2. Pieces matched:
0·88 m ➜ 0·12 m
0·766 m ➜ 0·234 m
0·9 m ➜ 0·1 m

3. 0·84 + 0·26 = 1·1, not 1. Lexi's mistake is that she forgot about the exchange from the hundredths to the tenths. To make 1, Lexi must add 0·74, so 7 tenths counters and 4 hundredths counters.

4. a) i) 0·62 ii) 0·616 iii) 0·62
b) 0·38 + 0·62 = 1
1 – 0·62 = 0·38
0·62 + 0·38 = 1
1 – 0·38 = 0·62

5. a) 0·3 + 0·7 = 1
b) 0·71 + 0·29 = 1
c) 0·95 + 0·05 = 1
d) 0·90 + 0·1 = 1
e) 0·213 + 0·787 = 0·912
f) 0·912 + 0·088 = 1
g) 1 – 0·24 = 0·76
h) 1 – 0·93 = 0·07
i) 1 – 0·235 = 0·765

6. a) 0·4 + 0·6 = 1
0·04 + 0·96 = 1
0·004 + 0·996 = 1
b) 0·4 + 0·6 = 1
0·40 + 0·6 = 1
0·400 + 0·6 = 1

7. a) Answers will vary; for example:

	O	·	Tth	Hth	Thth
	0	·	4	1	3
+	0	·	5	8	7
	1	·	0	0	0

b) Answers will vary; for example:

	O	·	Tth	Hth	Thth
	0	·	1	5	7
+	0	·	8	4	3
	1	·	0	0	0

	O	·	Tth	Hth	Thth
	0	·	8	1	5
+	0	·	1	8	5
	1	·	0	0	0

Same: The digits in the tenths and hundredths column total 9 and the digits in the thousandths column total 10.
Different: Digits in calculation vary and their positions vary between calculations.

Reflect

Yes, 0·207 + 0·793 does equal 1.

Explanations may vary; for example:
3 thousandths + 7 thousandths = 10 thousands which is the same as 1 hundredth. Adding this to the 9 hundredths gives 10 hundredths, which is the same as 1 tenth. Adding this to the 2 tenths and the 7 tenths gives 10 tenths, which equals 1.

Lesson 4: Adding and subtracting decimals (4)

➜ pages 15–17

1 a) 0·37 + 0·82 = 1·19

	O	·	Tth	Hth
	0	·	3	7
+	0	·	8	2
	1	·	1	9

b) 0·675 + 0·721 = 1·396

	O	·	Tth	Hth	Thth
	0	·	6	7	5
+	0	·	7	2	1
	1	·	3	9	6

c) 0·56 + 0·78 = 1·34

	O	·	Tth	Hth
	0	·	5	6
+	0	·	7	8
	1	·	3	4

d) 0·7 + 0·7 = 1·4

	O	·	Tth
	0	·	7
+	0	·	7
	1	·	4

e) 0·82 + 0·78 = 1·6

	O	·	Tth	Hth
	0	·	8	2
+	0	·	7	8
	1	·	6	0

2. Calculations matched to answers:
0·23 + 0·84 ➜ 1·07
0·76 + 0·52 ➜ 1·28
1 + 0·17 ➜ 1·17
0·74 + 0·63 ➜ 1·37
0·54 + 0·85 ➜ 1·39

3. The ruler and eraser cost £1·54 altogether.

4. Yes, he ran 1·25 km on Thursday compared to 1·026 km on Monday to Wednesday.

5. a)

	O	·	Tth	Hth
	0	·	4	3
+	0	·	6	7
	1	·	1	0

b)

	O	·	Tth	Hth
	0	·	7	8
+	0	·	5	9
	1	·	3	7

c)

	O	·	Tth	Hth	Thth
	0	·	7	3	2
+	0	·	7	8	1
	1	·	5	1	3

6. a) 0·51 + 0·63 < 0·51 + 0·73
b) 0·7 + 0·4 = 0·71 + 0·39

Reflect

0·5 + 0·6 = 5 tenths + 6 tenths = 11 tenths

Jamie needs to exchange 10 tenths for one whole to make 1·1. So, the correct answer is:

0·5 + 0·6 = 1·1

Lesson 5: Adding and subtracting decimals (5)

➜ pages 18–20

1. a)

	T	O	·	Tth	Hth
		6	·	5	0
+		4	·	3	1
	1	0	·	8	1

The total cost is £10·81.

b)

	O	·	Tth	Hth
	5	·	7	6
+	3	·	7	9
	9	·	5	5

The total cost is £9·55.

2. a) 2·3 + 4·6 = 6·9

	O	·	Tth
	2	·	3
+	4	·	6
	6	·	9

b) 3·5 + 5·8 = 9·3

	O	·	Tth
	3	·	5
+	5	·	8
	9	·	3

c) 1·98 + 0·77 = 2·75

	O	·	Tth	Hth
	1	·	9	8
+	0	·	7	7
	2	·	7	5

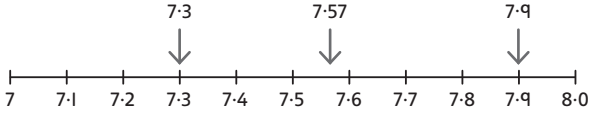
3. a) 0·502 + 4·165 > 3·258 + 0·875
b) 8·62 + 6·18 > 2·63 + 1·71 + 3·26

4. Zac has not aligned the decimal points, so the digits of 11·2 are in the wrong columns for their value.

	T	O	·	Tth	Hth
	1	1	·	2	0
+		3	·	6	9
	1	4	·	8	9

The correct answer is £14·89.

5. 4·5 + 2·8 = 7·3 2·75 + 4·82 = 7·57 1·823 + 6·077 = 7·9



6.

	Theatre	Cinema	Zoo	Circus
Cost for 1 adult and 2 children	£49	£26·33	£44·90	£34·20

They can afford to do any of the activities.

Reflect

Explanations will vary but children should mention adding together digits with the same value (or in the same column). Children should also explain the need to exchange 10 hundredths for 1 tenth.

	O	·	Tth	Hth
	4	·	5	3
+	3	·	7	8
	8	·	3	1

Lesson 6: Adding and subtracting decimals (6)

➜ pages 21–23

1. a)

	O	·	Tth	Hth
	2	·	$^{4}\not{5}$	$^{1}4$
−	1	·	0	5
	1	·	4	9

The loaf of bread costs £1·49.

b) Danny gets £0·16 change.

2. a) 5·4 – 3·2 = 2·2

	O	·	Tth
	5	·	4
−	3	·	2
	2	·	2

b) 7·26 – 4·83 = 2·43

	O	·	Tth	Hth
	$^{6}\not{7}$	·	$^{1}2$	6
−	4	·	8	3
	2	·	4	3

c) 2·661 – 0·625 = 2·036

	O	·	Tth	Hth	Thth
	2	·	6	$^{5}\not{0}$	$^{1}1$
−	0	·	6	2	5
	2	·	0	3	6

3. a) 7·07 b) 8·6

4. Kate has incorrectly subtracted 9 from 0 in the hundredths column without making an exchange.

	O	·	Tth	Hth
	$^{5}\not{6}$	·	$^{11}\not{2}$	$^{1}0$
−	0	·	5	9
	5	·	6	1

5. Holly has 5·8 km left to walk.

6. a) 2·28 b) 4·98

7. The different between A and C is 57·07 greater than between B and C.

Reflect

Answers will vary; for example:

Same: Both calculations involve subtracting from 5·8; both answers will be decimals with 1 decimal place; both answers are smaller than 3 …
Different: If completed using columnar method, a) will not involve exchange but b) will.

Methods will vary; children could use the column method, partitioning or counting up to find the difference. Encourage children to explain why each chosen method is a sensible one for the particular calculation.

Lesson 7: Adding and subtracting decimals (7)

➜ pages 24–26

1. Bella's plane flew 1·61 m further than Ebo's plane.

	O	·	Tth	Hth
	$^{1}\not{2}$	·	$^{1}3$	1
−	0	·	7	0
	1	·	6	1

2. a) 3·62 + 4·8 = 8·42

	O	·	Tth	Hth
	3	·	6	2
+	4	·	8	0
	8	·	4	2

b) 1·96 – 1·258 = 0·702

	O	·	Tth	Hth	Thth
	1	·	9	$^{5}\not{0}$	$^{1}0$
−	1	·	2	5	8
	0	·	7	0	2

3. a) 38·34 b) 11·372

4. a) 5·03 b) 114·75

5. Zac has incorrectly written the 7 in 3·7 into the hundredths column rather than the tenths column. The correct answer is 53·49 – 3·7 = 49·79.

	T	O	·	Tth	Hth
	$^{4}\not{5}$	$^{12}\not{3}$	·	$^{1}4$	9
−		3	·	7	0
	4	9	·	7	9

6. Danny's statement is always true; for example:
5·8 – 3·71 = 2·09
7·6 – 4·82 = 2·78
2·3 – 0·51 = 1·79

7. 16·1 – 4·125 = 11·975
The difference between A and B is 11·975.

8. 19·7 + 18·15 = 37·85
19·7 + 21·25 = 40·95
Sum = 37·85 or 40·95

Reflect

Answers will vary but should include:

Ensure that the digits go in the correct columns; ensure the decimal points are aligned; use exchange; where columns are empty, insert a zero as a place holder.

Lesson 8: Adding and subtracting decimals (8)

➜ pages 27–29

1. a) 7·37
b) Answers will vary; for example:
Ebo could use a mental method, number line or column addition.

2. 12 + 2·72 = 14·72
3 + 11·72 = 14·72
5 + 5 + 4·72 = 14·72
5 + 9·72 = 14·72
0·72 + 14 = 14·72
14·7 + 0·02 = 14·72

3. a) 7 – 3·8 = 3·2

	O	·	Tth
	$^{6}\cancel{7}$	·	$^{1}0$
–	3	·	8
	3	·	2

b) 12 – 4·35 = 7·65

	T	O	·	Tth	Hth
	1	$^{1}\cancel{2}$	·	$^{9}\cancel{1}0$	$^{1}0$
–		4	·	3	5
		7	·	6	5

4. a) 8 – 2·807 =
7·999 – 2·806 = 5·193
b) 12 – 4·91 =
11·99 – 4·90 = 7·09
c) 16 – 1·8 =
15·99 – 1·79 = 14·20

5. a) The total cost is £16·92.
b) There is 281·3 ml of sun cream left.

6. a) 3·45
b) 25·725
c) 10·67
d) 14·4
e) 450·85
f) 475·513

7. There is 9,250 ml more milk than lemonade.

8. a) 0·08
b) 9·52

Reflect

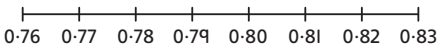
Number lines drawn may vary, but children should show that the difference between 2·4 and 7 is the same as the difference between 2·3 and 6·9.

Lesson 9: Decimal sequences

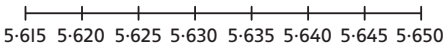
➜ pages 30–32

1 a) 4·6, 4·7, 4·8, 4·9, 5, 5·1, 5·2
b) 11·5, 11·9, 12·3, 12·7, 13·1, 13·5, 13·9, 14·3
c) 15·75, 15·7, 15·65, 15·6, 15·55, 15·5, 15·45

2. a)



b)



3. Kate is counting up 0·3 or 3 tenths each time. When she gets to 12 tenths, she has incorrectly said that this is 0·12.
12 tenths = 1 whole and 2 tenths = 1·2
The sequence should be: 0, 0·3, 0·6, 0·9, 1·2, 1·5.

4. a) 10·9; True
b) 39·69; False
c) 0; False
d) 0·88; True

5. a) 12·49, 12·51, 12·53
b) 18·01

6. a) 0·21, 0·42, 0·63, 0·84, 1·05, 1·26, 1·47
Rule: add 0·21
b) 11·3, 11·7, 12·1, 12·5, 12·9, 13·3, 13·7
Rule: add 0·4
c) 7·68, 7·61, 7·54, 7·47, 7·40, 7·33, 7·26
Rule: subtract 0·07

7.

Round	1	2	3	4	5	6
Distance travelled in round (km)	0·8	1·6	2·4	3·2	4·0	4·8
Total distance travelled so far (km)	0·8	2·4	4·8	8	12	16·8

Reflect

Answers will vary depending on sequence chosen; for example:

0, 0·6, 1·2, 1·8, 2·4, 3·0, 3·6
Rule: add on 0·6 each time

4·9, 4·2, 3·5, 2·8, 2·1, 1·4, 0·7, 0
Rule: subtract 0·7 each time

Lesson 10: Problem solving – decimals

➜ pages 33–35

1. a) 98·775 kg
b) 55·38 m
c) £1·28

2. Toshi drives 33·15 km in total.

3. The mass of the grape is 2·55 g.

4. 0·21 and 0·99 circled.

5. 98·889

6. £7·70

Reflect

Answers will vary; for example:

Lucy the dog has a mass of 54·47 kg and Deano the dog has a mass of 44·305 kg. What is their total mass? (98·775 kg)

Lesson I1: Problem solving – decimals (2)

➜ pages 36–38

1. The total cost of the three items is £18·04.

2. £12·48

3. 14·98 litres

4. 3·578 + 8·655 – 2·233 = 10

5. 3·4 m

6. 0·02

7. Richard has: £100 – £1·20 = £98·80
Kate has: £98·80 – £36·98 = £61·82
She had: £61·82 + £24·78 (stationery) = £86·60
£98·80 – £86·60 = £12·20
So, Richard has saved £12·20 more than her.

Reflect

Answers will vary; for example:

Holly is baking. She has a 5 kg bag of flour. She uses 1·1 kg of flour making cup cakes and then 690 g of flour making pancakes. How much flour has she left?

Lesson I2: Multiplying decimals by 10 decimals (1)

➜ pages 39–41

1. a) 24 b) 1·3

2. a) 13 (place value grid shows 13)
b) 13·5 (place value grid shows 13·5)
c) 135 (place value grid shows 135)
d) 1·35 (place value grid shows 1·35)

3. Olivia has added a 0 at the end; however, putting a 0 into the hundredths column does not change the value of the number so does not multiply it by 10. The correct answer is obtained by moving the digits one column to the left to get 148.

4. Lines drawn to match calculations to answers:
0·003 × 10 ➜ 0·03
3·53 × 10 ➜ 35·3
0·03 × 10 ➜ 0·3
10 × 0·353 ➜ 3·53
0·3 × 10 ➜ 3
10 × 3·003 ➜30·03
0·0353 × 10 ➜ 0·353

5. a) 5·8 × 10 = 58
b) 5·82 × 10 = 58·2
c) 24·9 × 10 = 249
d) 1·09 × 10 = 10·9
e) 21·08 × 10 = 210·8
f) 0·198 × 10 = 1·98
g) 10 × 21·08 = 210·8
h) 0·019 × 10 = 0·19
i) 30·9 = 3·09 × 10
j) 0·04 × 10 = 0·4
k) 30·99 = 3·099 × 10
l) 0·004 × 10 = 0·04
m) 309·9 = 30·99 × 10
n) 0·040 × 10 = 0·4

6. a) 125 × 10 = 1,250 so Luis is not correct. He needs to use the inverse operation to find the missing number. The inverse of multiplication is division, so the missing number is 12·5 ÷ 10 = 1·25. (1·25 × 10 = 12·5)
b) 1·5 × 10 = 15
2·5 × 10 = 25
0·92 × 10 = 9·2
10 × 1·52 = 15·2
0·173 × 10 = 1·73
1·73 × 10 = 17·3

7. Mo has travelled 3 m further than Lexi.

Reflect

Explanations will vary; for example:

When a number is multiplied by 10, the digits do not change and their order does not change. However, each digit moves one place to the left in the place value grid to make its value 10 times greater; for example:

1·1 × 10 = 11

Lesson I3: Multiplying decimals by 10, 100 and 1,000

➜ pages 42–44

1. a) 79
790
7,900

Th	H	T	O	•	Tth	Hth
			7	•	9	
		7	9	•		
	7	9	0	•		
7	9	0	0	•		

b) 21·9
219
2,190

Th	H	T	O	•	Tth	Hth
			2	•	1	9
		2	1	•	9	
	2	1	9	•		
2	1	9	0	•		

c) 84

Th	H	T	O	•	Tth	Hth
			0	•	8	4
		8	4	•		

d) 700

Th	H	T	O	•	Tth	Hth
			0	•	7	
	7	0	0	•		

e) 5

Th	H	T	O	•	Tth	Hth
				•	0	5
			5	•		

f) 1,700

Th	H	T	O	•	Tth	Hth
			1	•	7	
1	7	0	0	•		

2. a) 40
4
0·4
40

c) 9·12
0·912
0·00912
0·0912

b) 170
1,700
170

d) 100
100
10
1,000

3. a) 335 litres b) 20 m

4.

Number	0·1207	0·0036	0·38	0·07691	0·012
× 1,000	120·7	3·6	380	76·91	12
× 100	12·07	0·36	38	7·691	1·2

5. a) In any order:
6·8 × 10 = 68
0·68 × 100 = 68
0·068 × 1,000 = 68

b) Answers will vary; for example:
6·8 × 10 = 0·68 × 100
0·68 × 10 = 0·068 × 100
6·8 × 100 = 0·68 × 1,000

Reflect

- Multiplying by 100 is the same as multiplying by 10 and 10 again.
- Multiplying by 1,000 is the same as multiplying by 10 and 10 and 10 again.

When demonstrating how to use a place value grid to multiply by 100 and 1,000, check that children recognise that the digits stay the same but move 2 places (× 100) and 3 places (× 1,000) to the left with 0s being inserted as place holders in any empty spaces in the place value grid.

Lesson 14: Dividing decimals by 10

➜ pages 45–47

1. 0·12

2. a) 0·45
b) 0·045

c) 4·5
d) 0·452

3. 0·231 in each section of bar model.
2·31 ÷ 10 = 0·231

4. The mass of one apple is 0·28 kg.

5. a) 60·3
b) 16·03
c) 1·631

d) 10
e) 0·8
f) 0·3978

g) 0·35
h) 87·19
i) 389·5

6. Max has correctly divided 35 by 10 to get the answer of 3·5, but since this is money, he needs to put the answer to 2 decimal places by writing 0 in the hundredths column, i.e. £3·50.

7. a) 100 ml of lemonade costs £0·18.
b) 200 g of cocoa costs £2·40.
Explanations may vary; for example:
1 kg = 1,000 g
So, 100 g of cocoa costs:
£12 ÷ 10 = £1·20
Therefore, 200 g of cocoa costs:
2 × £1·20 = £2·40

8. Toshi uses 0·025 kg of hot chocolate powder in each cup.

Reflect

Answers will vary; children should recognise that the digits stay the same but move 1 place to the right with 0s being inserted as place holders in any empty spaces in the place value grid.

Lesson 15: Dividing decimals by 10, 100 and 1,000

➜ pages 48–50

1. a) 0·23

H	T	O	•	Tth	Hth	Thth
	2	3	•	0		
		0	•	2	3	

b) 0·145

H	T	O	•	Tth	Hth	Thth
1	4	5	•			
		0	•	1	4	5

c) 0·052

H	T	O	•	Tth	Hth	Thth
		5	•	2		
		0	•	0	5	2

d) 0·013

H	T	O	•	Tth	Hth	Thth
	I	3	•			
		0	•	0	I	3

2. Bella is correct. Explanations may vary, but most likely explanation is to divide each tenth of the grid into 10 equal pieces and to note that the whole grid is now divided into 100 equal pieces.

3. a) True
b) True
c) False, 53 ÷ 100 = 0·53
d) True
e) False, 8·7 ÷ 100 = 0·087
f) False, 9·1 ÷ 1,000 = 0·0091

4. Calculations matched:
0·8 ÷ 100 ➜ 8 ÷ 1,000
0·18 ÷ 100 ➜ 1·8 ÷ 1,000
10·8 ÷ 100 ➜ 108 ÷ 1,000
0·108 ÷ 10 ➜ 1·08 ÷ 100

5. a) 10, 100, 1,000 b) 1·2, 12, 120

6. Jamie saved £1·06 more each day.

7. ■ = 0·98
▲= 0·00098
★ = 0·00061
● = 0·0061

Reflect

Yes, Reena is correct. Explanations may vary; for example:

0·351 ÷ 10 = 0·0351
3·51 ÷ 100 = 0·0351
35·1 ÷ 1,000 = 0·0351

All three of these calculations are equal.

End of unit check

➜ pages 51–53

My journal

1. a)

	T	O	·	Tth	Hth
	~~1~~	^{1}1	·	9	9
−		4	·	3	4
		7	·	6	5

	T	O	·	Tth	Hth
	1	^{11}~~2~~	·	^{9}~~1~~~~0~~	^{1}0
−		4	·	3	5
		7	·	6	5

It is easier to do the calculation 11·99 – 4·34 than 12 – 4·35.
Max could also count on from 4·35 to 12·00.

b) Common mistakes are: putting the digits in the wrong column, not using zero as a place holder when needed, and misaligning the decimal points.

2. Answers will vary, but should include that all involve addition with decimals but with different number of decimal places and in the last two calculations the need to exchange when using column addition.

Power play

Answers will vary; for example:

2	÷ 100	÷ 10	× 100	× 10	÷ 100
÷ 1,000	× 100	× 10	÷ 10	× 100	× 10
× 10	÷ 100	× 10	÷ 10	× 100	÷ 1,000
× 100	÷ 10	× 1,000	× 100	× 10	0·002

2	÷ 100	÷ 10	× 100	× 10	÷ 100
÷ 1,000	× 100	× 10	÷ 10	× 100	× 10
× 10	÷ 100	× 10	÷ 10	× 100	÷ 1,000
× 100	÷ 10	× 1,000	× 100	× 10	2