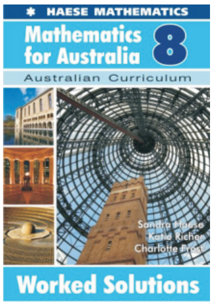


ERRATA

Mathematics for Australia 8

Worked Solutions

2012 First Edition

page 14 **CHAPTER 1 EXERCISE 1E,** Question **5** had parts **i** to **l** removed, and a new question **6** was inserted:

6 **a** The prime factors of 8 are $2 \times 2 \times 2$
The prime factors of 18 are $2 \times 3 \times 3$
$2 \times 2 \times 2 \times 3 \times 3$
$\therefore$ LCM $= 72$

b The prime factors of 24 are $2 \times 2 \times 2 \times 3$
The prime factors of 15 are 3×5
$2 \times 2 \times 2 \times 3 \times 5$
$\therefore$ LCM $= 120$

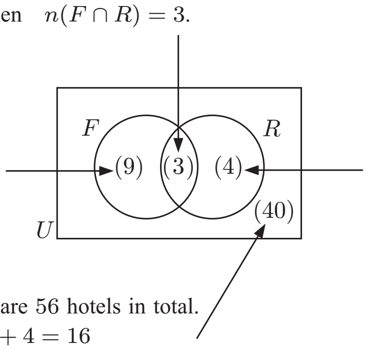
c The prime factors of 3 are 3
The prime factors of 7 are 7
The prime factors of 8 are $2 \times 2 \times 2$
$2 \times 2 \times 2 \times 3 \times 7$
$\therefore$ LCM $= 168$

(This affects Mathematics for Australia 8 textbooks printed during or after 2014 where this question was inserted. Note that this bumps the existing questions **6** and **7** to become questions **7** and **8**. Original solutions to question **5** parts **i** to **l** are included at the end of this document.)

page 37 and 38 **CHAPTER 2 PRACTICE TEST 2C,** Question **1** was changed, solution changes accordingly:

1 **a** Let F be the set of hotels that had fleas, and R be the set of hotels that had rats.
If 3 hotels had both pests, then $n(F \cap R) = 3$.

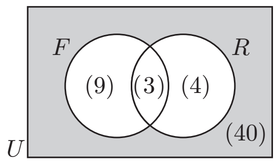
12 had fleas
$9 + 3 = 12$
So there must be 9 hotels here.



7 had rats
$3 + 4 = 7$
So there must be 4 hotels here.

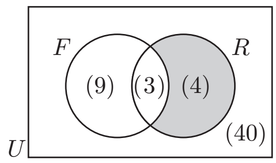
There are 56 hotels in total.
$9 + 3 + 4 = 16$
So, $56 - 16 = 40$ hotels did not have fleas or rats.

b **i**



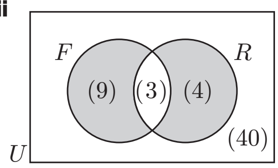
The hotels which had neither fleas nor rats are in the set $(F \cup R)'$.
$\therefore$ 40 hotels had neither fleas nor rats.

ii



The hotels which had rats, but not fleas are in the set $R \cap F'$.
$\therefore$ 4 hotels had rats, but not fleas.

iii



The shaded region represents the hotels which had either fleas or rats, but not both.
$\therefore$ $9 + 4 = 13$ hotels had either fleas or rats, but not both.

(original solution included at the end of this document for people with Mathematics for Australia 8 textbooks printed before 2014) page 107 **CHAPTER 6 PRACTICE TEST 6B,** Question **7 a** was changed, solution changes accordingly:

7 a $\dfrac{3^2 \times 3^4}{3^3} = \dfrac{3^{2+4}}{3^3}$
$= \dfrac{3^6}{3^3}$
$= 3^{6-3}$
$= 3^3$

(2014 onwards solution)

7 a $\dfrac{3^3}{3^2 \times 3^4} = \dfrac{3^3}{3^{2+4}}$
$= \dfrac{3^3}{3^6}$
$= 3^{3-6}$
$= 3^{-3}$

(Pre 2014 solution)

page 109 **CHAPTER 7 EXERCISE 7A,** Question **3 b** should not say the equation is true when k = 1:

3 b $k + k = k^2$ is true for only certain values of k (0, 2)
$\therefore$ $k + k = k^2$ is not an identity

page 293 **CHAPTER 16 EXERCISE 16D,** Question **1 a** should read:

1 a If x is greater than 9 and $3x + 4y = 30$, then y will not be positive.

page 299 **CHAPTER 16 EXERCISE 16F,** Question **8** had a minor typographical error:

8 In a rhombus, all sides are equal.
$\therefore$ $7x + 1 = 2x + 7$
$\therefore$ $5x + 1 = 7$ {subtracting $2x$ from both sides}
$\therefore$ $5x = 6$ {subtracting 1 from both sides}
$\therefore$ $x = \dfrac{6}{5}$ {dividing both sides by 5}
$= 1.2$
$\therefore$ the sides have length $2(1.2) + 7 = 9.4$ cm
$\therefore$ the perimeter of the rhombus is 4×9.4 cm $= 37.6$ cm

page 331 **CHAPTER 18 EXERCISE 18A,** Question **4 c** should not mistake decimal places for significant figures:

4 c There were 2 Australian guests.
Expressed as a percentage of the total, this is $\dfrac{2}{36} \times 100\% = \dfrac{200}{36}\%$
$\approx 5.56\%$ (3 s.f.)
$\therefore$ approximately 5.56% of the guests were Australian.

page 339 **CHAPTER 18 EXERCISE 18D.1,** Question **9 c** should read:

9 c The new data set is: 11 24 28 22 16 13 10
The new mean $= \dfrac{114 + 10}{7}$ {using the sum from **a**}
$= \dfrac{124}{7}$
≈ 17.7 (3 s.f.)
So, the new mean is 17.7 mm of rain.

page 14 **CHAPTER 1 EXERCISE 1E,** Question **5** had parts **i** to **l** removed, original solution provided:

(These solutions apply to Mathematics for Australia 8 textbooks printed before 2014)

5 **g**

2	936
2	468
2	234
3	117
3	39
13	13
	1

$\therefore\ 936 = 2 \times 2 \times 2 \times 3 \times 3 \times 13$
$= 2^3 \times 3^2 \times 13$

h

5	1225
5	245
7	49
7	7
	1

$\therefore\ 1225 = 5 \times 5 \times 7 \times 7$
$= 5^2 \times 7^2$

i

2	588
2	294
3	147
7	49
7	7
	1

$\therefore\ 588 = 2 \times 2 \times 3 \times 7 \times 7$
$= 2^2 \times 3 \times 7^2$

j

3	945
3	315
3	105
5	35
7	7
	1

$\therefore\ 945 = 3 \times 3 \times 3 \times 5 \times 7$
$= 3^3 \times 5 \times 7$

k

2	910
5	455
7	91
13	13
	1

$\therefore\ 910 = 2 \times 5 \times 7 \times 13$

l

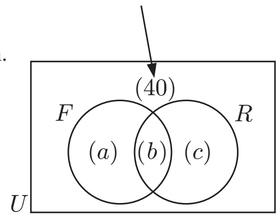
2	1274
7	637
7	91
13	13
	1

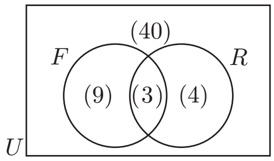
$\therefore\ 1274 = 2 \times 7 \times 7 \times 13$
$= 2 \times 7^2 \times 13$

page 37 and 38 **CHAPTER 2 PRACTICE TEST 2C,** Question **1** was changed, original solution provided:

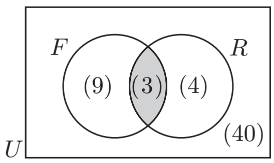
(This solution applies to Mathematics for Australia 8 textbooks printed before 2014)

1 **a** Let F be the set of hotels that had fleas, and R be the set of hotels that had rats.
56 hotels were visited, so $n(U) = 56$.
12 hotels had fleas, so $n(F) = 12$.
7 hotels had rats, so $n(R) = 7$.
40 hotels were free of these pests, so $n((F \cup R)') = 40$.
$\therefore\ n(F \cup R) = 56 - 40 = 16$
So, 16 hotels had either fleas or rats or both.
$\therefore\ a + b + c = 16$
But 12 hotels had fleas
$\therefore\ a + b = 12 \qquad \therefore\ c = 4$
and 7 hotels had rats
$\therefore\ b + c = 7$
$\therefore\ b + 4 = 7$
$\therefore\ b = 3$
and $a + b = 12$
$\therefore\ a + 3 = 12$
$\therefore\ a = 9$



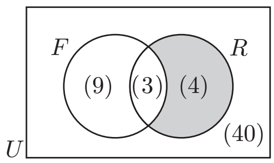


b **i**



The shaded region represents the hotels which had both fleas and rats.
$\therefore$ 3 hotels had both fleas and rats.

ii



The shaded region represents the hotels which had rats, but not fleas.
$\therefore$ 4 hotels had rats, but not fleas.