

ERRATA

MATHEMATICS FOR AUSTRALIA 12

Mathematical Methods

First edition - 2019 second reprint

The following erratum was made on 25/May/2020

page 137 INVESTIGATION 2 Question 3 b, should read:

3 Use the midpoint rule to estimate:

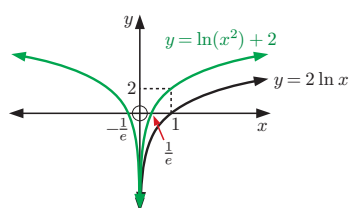
a $\int_0^2 \sin(x^2) dx$

b the area enclosed between $y = \sin(x^2)$, the x -axis, and the vertical lines $x = 0$ and $x = 2$.

The following erratum was made on 21/Feb/2020

page 300 ANSWERS EXERCISE 1C Question 5 e, should read:

5 e



The following erratum was made on 23/Dec/2019

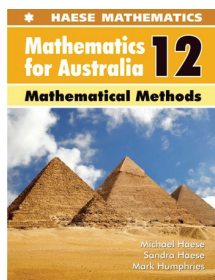
page 319 ANSWERS EXERCISE 5D Question 5 b, should read:

5 a C_1 is $y = 3 \sin\left(\frac{\pi t}{10}\right)$, C_2 is $y = \sin\left(\frac{\pi t}{10}\right)$ b $\frac{40}{\pi}$ units

The following erratum was made on 22/Oct/2019

page 331 ANSWERS EXERCISE 9F.2 Question 2, should read:

1 ≈ 8070 people 2 865 trial runs



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The following errata were made on 15/May/2019

page 84 **EXERCISE 3F** Question **1**, should have domain:

- 1** The quantity of a chemical in human skin which is responsible for its ‘elasticity’ is given by $Q(t) = 100 - 10\sqrt{t}$ where t is the age of a person in years, $0 \leq t \leq 100$.

page 104 **EXERCISE 4A.2** Question **5 b**, should have integrals with respect to x :

- 5 b** For a positive function $f(x)$, $\int_2^5 f(x) dx = 10$, and $\int_5^9 f(x) dx = 12$. Find:

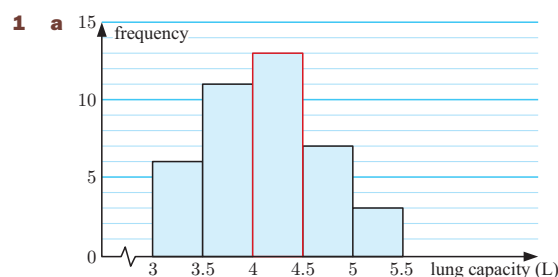
The following erratum was made on 22/Mar/2018

page 314 **ANSWERS REVIEW SET 3B** Question **15 b**, should state that the answer is for part **b**:

- 14** $x \approx 2.11$ **15 b** $\frac{1}{\sqrt{2}}$ metres

The following erratum was made on 10/Jan/2018

page 329 **ANSWERS REVIEW SET 8A** Question **1 a**, should have interval from 4 to 4.5 frequency = 13:



The following erratum was made on 05/Jan/2018

page 332 **ANSWERS REVIEW SET 9A** Questions **13 b** and **c**, should read:

- 13 a** $0.468 \leq p \leq 0.508$ **b** width ≈ 0.0392
c 2410 people

The following errata were made on 25/Jul/2017

page 94 **REVIEW SET 3A** Question **15 b**, should read:

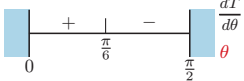
- 15 b** Show that if $\theta = \widehat{APM} = \widehat{BPM}$, then the length of cable is given by

$$L(\theta) = 3 + \frac{2 - \cos \theta}{\sin \theta} \text{ km.}$$

page 312 **ANSWERS EXERCISE 3F** Question **6 e**, should read:

- 6 e** Hint: You should find $\frac{dW}{dt} = -\frac{1}{50} \ln 2 \times 20e^{-\frac{t}{50} \ln 2}$

page 312 **ANSWERS EXERCISE 3G** Question **9 d**, should read:

9 c $\theta = \frac{\pi}{6}$ **d** 

page 313 **ANSWERS REVIEW SET 3A** Question **6 b**, should read:

6 a $x > 0$

b $f'(x) = 1 + \frac{1}{x}$ $f''(x) = -\frac{1}{x^2}$



$f(x)$ is increasing for all $x > 0$ and is concave downwards for all $x > 0$.

The following erratum was made on 3/Jul/2017

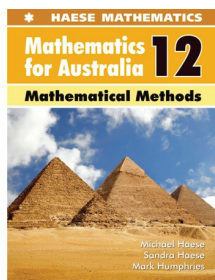
page 26 **REVIEW SET 1B** Question **11**, should read:

- 11** The temperature of a mug of water t minutes after it has been poured from a kettle is given by $T = 60e^{-0.1t} + 20$ °C.
Show that it will take $10 \ln 3$ minutes for the temperature of the water to fall to 40°C.

The following errata were made on 13/Jun/2017

page 78 **Chapter 3 EXAMPLE 11** Solution, second to last line should read:

$f'(x)$ has a local maximum when $x = -4$ and a local minimum when $x \approx 2\frac{1}{2}$.



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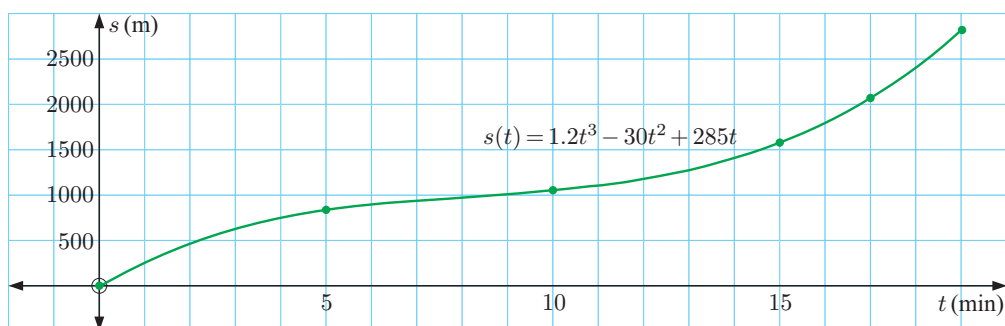
MATHEMATICS FOR AUSTRALIA 12

Mathematical Methods

First edition - 2016 initial print

The following errata were made on 27/Feb/2017

page 60 Chapter 3 Opening problem Graph should be:



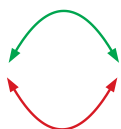
page 301 ANSWERS REVIEW SET 1A Question 2 c, should read:

2 a 3 b -2 c $\frac{5}{2}$ 3 a $\ln 7$ b $\frac{1}{6}$ c $\frac{7}{2}$

The following errata were made on 30/Jan/2017

page 69 Section 3D Explanation should read:

When a curve, or part of a curve, has shape:



we say that the **curve** is **concave downwards**

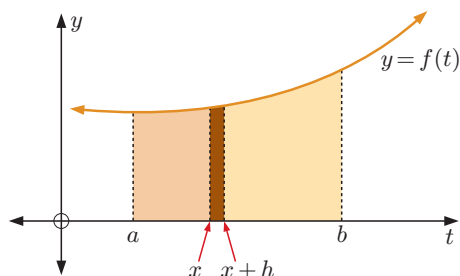
we say that the **curve** is **concave upwards**.

page 108 Section 4C Explanation should keep naming consistent:

Consider the narrow strip between $t = x$ and $t = x + h$. The area of this strip is $A(x + h) - A(x)$, but we also know it must lie between a lower and upper rectangle on the interval $x \leq t \leq x + h$ of width h .

area of **lower** rectangle $\leq A(x + h) - A(x) \leq$ area of **upper** rectangle

If $f(t)$ is increasing on this interval then



page 312 ANSWERS EXERCISE 3G Question 9 e ii, should read:

9 e ii **Walk** from P to R.

page 326 ANSWERS EXERCISE 8B.1 Question 4 b, should read:

4 a $a = \frac{3}{16}$ b $\frac{1}{8}$

page 327 ANSWERS EXERCISE 8B.2 Question 5 c, should read:

5 a If $k = \frac{1}{2}$, $f(x) < 0$ b $k = \frac{1}{3}$ c $\frac{11}{25}$

The following errata were made on 9/Jan/2017

page 67 EXERCISE 3B Question 8, should read:

8 Suppose $f(x) = \frac{x+k}{x^2+k}$ is **never increasing**. What range of values could the constant k have?

page 304 ANSWERS EXERCISE 2E Question 1 d, should read:

1 d $\frac{dy}{dx} = \frac{2x+1}{2\sqrt{x}(1-2x)^2}$

page 307 ANSWERS EXERCISE 3B Question 8, should read:

8 $-1 \leq k \leq 0$

The following erratum was made on 6/Dec/2016

page 308 ANSWERS EXERCISE 3C Question 7 d, should have correct coordinate label for local maximum:

7 d $(\frac{\pi}{2}, e)$ is a local maximum,
 $(\frac{3\pi}{2}, \frac{1}{e})$ is a local minimum

