

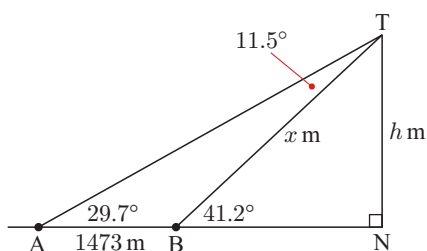
ERRATA

Advanced Mathematics 1 for AS and A Level

First edition - 2017 initial print

The following erratum was made on 29/Apr/2020

page 272 CHAPTER 11 EXAMPLE 15, second line of solution should read:



Let BT be x m and NT be h m.

$$\begin{aligned}\widehat{ATB} &= 41.2^\circ - 29.7^\circ \quad \{\text{exterior angle of } \triangle ABT\} \\ &= 11.5^\circ\end{aligned}$$

We find x in $\triangle ABT$ using the sine rule:

$$\begin{aligned}\frac{x}{\sin 29.7^\circ} &= \frac{1473}{\sin 11.5^\circ} \\ \therefore x &= \frac{1473}{\sin 11.5^\circ} \times \sin 29.7^\circ \\ &\approx 3660.62\end{aligned}$$

The following erratum was made on 12/Feb/2020

page 627 ANSWERS EXERCISE 13C, questions 8 a and 9 a should read:

- 8 a $(a - b)(a + b) = b(a - b) \nRightarrow a + b = b$
 $2a = a \nRightarrow 2 = 1$
- b $\frac{4x - 40}{6 - x} = \frac{4x - 40}{13 - x} \nRightarrow 6 - x = 13 - x$
- 9 a $6x - 12 = 3(x - 2) \nRightarrow 6x - 12 + 3(x - 2) = 0$
 b $x(x - 6) = 3(-3) \nRightarrow x = 3 \vee x - 6 = -3$
 c $(x + 3)(2 - x) = 4 \nRightarrow x + 3 = 4 \vee 2 - x = 4$

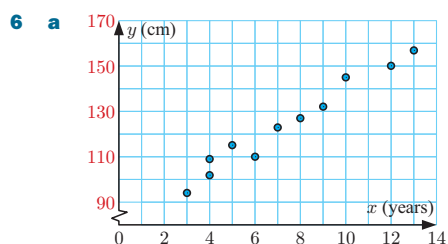
The following erratum was made on 11/Sep/2019

page 652 ANSWERS REVIEW SET 21A, question 9 c should use correct variable name:

9 c $R \approx 56.1 \times 0.997^t$

The following erratum was made on 10/Dec/2018

page 651 ANSWERS REVIEW SET 21A, question 6 a should have correct y -axis labels:



The following errata were made on 26/Nov/2018

page 51 **CHAPTER 3 SECTION A**, blue box *Step 2* should not contain the word “coefficient”:

Start with the quadratic equation in the form $ax^2 + bx + c = 0$.

Step 1: If $a \neq 1$, divide both sides by a .

Step 2: Rearrange the equation so that only the constant is on the RHS.

Step 3: Add to both sides $\left(\frac{\text{coefficient of } x}{2}\right)^2$.

Step 4: Factorise the LHS.

Step 5: Use the rule: If $X^2 = a$ then $X = \pm\sqrt{a}$.

page 234 **EXERCISE 9D**, question **11** is an accidental duplicate, remove it and renumber subsequent questions accordingly:

~~**11** Consider the expression $(x^2y - 2y^2)^6$. Find the term in which x and y are raised to the same power.~~

page 469 **EXERCISE 20A.2**, question **2 f** should read:

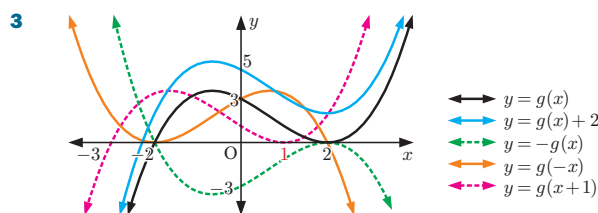
- 2** Click on the icon to obtain a printable calendar for 2016 showing the weeks of the year. Each day is numbered.

Using a random number generator, choose a sample from the calendar of:

- a** five different dates **b** a complete week starting with a Monday
c a month **d** three different months **e** three consecutive months
f five different dates during **summer** **g** four different Wednesdays.

Explain your method of selection in each case.

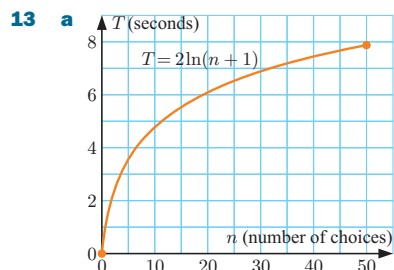
page 596 **ANSWERS EXERCISE 4D.4**, question **3** should have correct x -axis label at 1:



page 599 **ANSWERS REVIEW SET 4B**, question **9 a** should not claim anything about the y -intercept:

- 9 a** x -intercepts -9 and -3

page 612 **ANSWERS REVIEW SET 7B**, question **13 a** should sketch graph only on the domain specified in the question:



page 618 **ANSWERS EXERCISE 9D**, question **11** is an accidental duplicate, remove it and renumber subsequent questions.

page 621 **ANSWERS EXERCISE 11E**, the following answers should be approximate:

EXERCISE 11E

- 1** **a** $\approx 28.9 \text{ cm}^2$ **b** $\approx 384 \text{ km}^2$ **c** 20 m^2
d $\approx 18.7 \text{ cm}^2$ **e** $\approx 28.3 \text{ cm}^2$ **f** $\approx 52.0 \text{ m}^2$
- 2** **a** yellow **b** brown **3** $x \approx 19.0$
- 4** $\approx 18.9 \text{ cm}^2$ **5** $\approx 137 \text{ cm}^2$ **6** $\approx 374 \text{ cm}^2$
- 7** $\approx 7.49 \text{ cm}$ **8** $\approx 11.9 \text{ m}$
- 9** **a** $\approx 48.6^\circ$ or $\approx 131.4^\circ$ **b** $\approx 42.1^\circ$ or $\approx 137.9^\circ$
- 10** $\frac{1}{4}$ is not covered
- 11** **a** $\approx 35.1 \text{ cm}^2$ **b** $\approx 61.8 \text{ cm}^2$ **c** $\approx 40.4 \text{ mm}^2$
- 12** $\approx 4.69 \text{ cm}^2$

page 622 **ANSWERS REVIEW SET 11A**, question **16 b** should read:

- 16** **a** $\approx 69.5^\circ$, $\approx 110.5^\circ$ **b** $\approx 16.3 \text{ cm}^2$, $\approx 8.09 \text{ cm}^2$

page 631 **ANSWERS EXERCISE 15F**, question **6 d ii** should read:

- 6 d** **i** $-\sqrt{6} \leq x \leq 0$ and $x \geq \sqrt{6}$
ii $x \leq -\sqrt{6}$ and $0 \leq x \leq \sqrt{6}$

page 636 **ANSWERS REVIEW SET 17B**, question **4 a** should have correct sign diagram for acceleration:

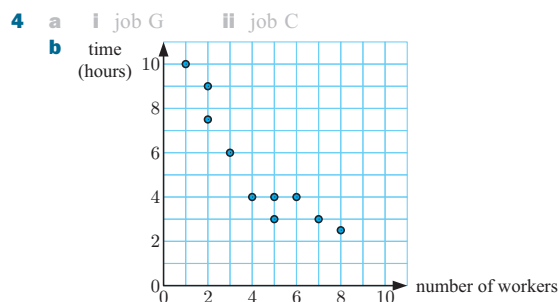
4 a $v(t) = 3 - \frac{3}{2}\sqrt{t} \text{ cm s}^{-1}$ $a(t) = -\frac{3}{4\sqrt{t}} \text{ cm s}^{-2}$

The velocity sign diagram shows a horizontal axis for time t starting at 0. A vertical line is drawn at $t=4$. To the left of $t=4$, the sign is '+' and to the right, it is '-'. The acceleration sign diagram shows a horizontal axis for time t starting at 0. For all $t > 0$, the sign is '-'.

page 642 **ANSWERS EXERCISE 20A.2**, question **2 a** should read:

- 2 a** Select 5 random numbers between 1 and 366 inclusive. For example, 65, 276, 203, 165, and 20 represent March 5, October 2, July 21, June 13, and January 20.

page 646 **ANSWERS EXERCISE 21A**, question **4 b** display of plot should have axes swapped to:



page 648 **ANSWERS EXERCISE 21C**, question **3** should use correct currency:

- 3 a** $r \approx -0.924$
b There is a strong, negative, linear correlation between the petrol price and the number of customers.
c $y \approx -4.27x + 489$
d ≈ -4.27 ; this indicates that for every pence per litre the petrol price increases by, the number of customers will decrease by approximately 4.27.
e ≈ -5.10 customers
f ≈ 105.3 pence per litre

The following erratum was made on 19/Oct/2017

page 576 **CHAPTER 23 EXAMPLE 8**, table heading in solution should read:

- a** The test statistic is the number of ones that appear in 6 rolls of the die, X .
 $\therefore X \sim B(6, 0.25)$

x	p -value
0	1
1	≈ 0.822
2	≈ 0.466
3	≈ 0.169
4	≈ 0.0376
5	≈ 0.00464
6	$\approx 2.44 \times 10^{-4}$

The following erratum was made on 25/Jul/2017

page 185 **REVIEW SET 7A**, should read:

- 13** 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 erratum was made on 13/Jun/2017

page 295 **CHAPTER 12 EXAMPLE 6** solution, diagram should not have axis labels to avoid confusion:

Example 6

 **Self Tutor**

Solve $2 \sin 3x = 1$ on the interval $0^\circ \leq x \leq 180^\circ$.

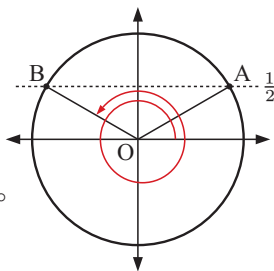
$$2 \sin 3x = 1$$

$$\therefore \sin 3x = \frac{1}{2}$$

Since $0^\circ \leq x \leq 180^\circ$
 $0^\circ \leq 3x \leq 540^\circ$

$$\therefore 3x = 30^\circ, 150^\circ, 390^\circ, \text{ or } 510^\circ$$

$$\therefore x = 10^\circ, 50^\circ, 130^\circ, \text{ or } 170^\circ$$



Start at angle 0° and work around to 540° , noting down the angle every time you reach points A and B.

