

ERRATA

MATHEMATICS FOR THE INTERNATIONAL STUDENT MATHEMATICAL STUDIES SL (2nd edition)

Second edition - 2010 initial print run

page 21 **TEXT** first section sub-heading on the page should read:

FINDING r AND THE LINE OF BEST FIT

page 31 **TEXT** first paragraph on the page should read:

The TI-84 Plus does not have a built-in method to solve quadratic equations. We must write our own program. Note that this program can not be taken into examinations.

page 41 **TEXT** first paragraph under **SOLVING QUADRATIC EQUATIONS** sub-heading should read:

We will write our own program to solve quadratic equations. Note that this program can not be taken into examinations.

page 196 **REVIEW SET 6D** question **9** is an extension question

page 291 **EXAMPLE 5** last line of solution **b** should be:

$$= (x + 1 + \sqrt{11})(x + 1 - \sqrt{11})$$

page 412 **TEXT** first paragraph underneath the INVESTIGATION 2 box should read:

You should have discovered that the area of an isosceles triangle is half of the **product** of its equal sides and the sine of the included angle between them.

page 429 **REVIEW SET 13B** question **11 a, 11 b** is an extension question

page 430 **REVIEW SET 13C** questions **10** and **11 a, 11 b** are extension questions

page 477 **TEXT** blue box on top of Example 23 should be:

$$\frac{r}{100} = \left(1 + \frac{i}{100}\right)^c - 1$$

where r is the **effective rate**
 i is the **rate per compound interest period**
 c is the **number of compound periods per annum.**

page 535 **TEXT** bottom of page, truth table, line pointing to the last row of the table should read:

← $p \vee q$ is only false if both p and q are false.

page 545 **EXERCISE 17D**

8 b $(p \wedge q) \Rightarrow (p \vee q)$

page 554 **REVIEW SET 17B**

1 b List the truth sets of: **i** $p \wedge q$ **ii** $q \wedge r$ **iii** $p \wedge r$

page 569 **TEXT** third bullet point in the blue box should be:

- in $y = \cos x + c$, c affects the principal axis.

- 5 Find $\frac{d^2y}{dx^2}$ for: **a** $y = 7x^3 - 4x$ **b** $y = 2x^2 + \frac{5}{x}$

- b** $C'(150) = \$14.38$ per item

- 1** The cost per racquet of making x tennis racquets each day is given by

- 2** **c** Find the position and nature of any stationary points.
3 **c** At what speed will the cost per hour be a minimum?

- 52** **c** **i** p and q , if $p < q$

- 68** **a** Sketch $y = f(x)$ for the region $-4 \leq x \leq 4$.

- 71** **b** Calculate, in terms of *Option 2*, the percentage difference in the interests calculated in **a**.

- 77** Dong Hee invests 5000 Korean won (KRW) into an account which pays a nominal interest rate of 7.25% p.a. compounded monthly. Find:

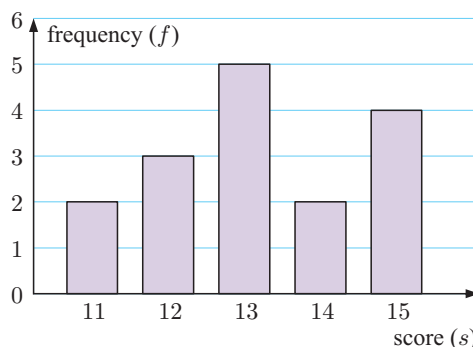
- 85** **d** Find the percentage difference in the calculated speeds, in terms of the faster speed.

- 90** **c** Use your results from **a** and **b** to comment on the statement:
 “Those who do well in language also do well in mathematics.”

- 108** **c** For how many months of the year are there at least 13.5 hours of daylight?

125

Score (s)	Frequency (f)	$s \times f$
11	2	22
12	w	x
13	5	65
14	2	28
15	4	60
Totals	y	z



- 6** **d** Sketch $y = f(x)$ on the region $-1 \leq x \leq 5$, $-10 \leq y \leq 25$. Clearly show all turning points and axes intercepts.

- 8** The racquet sports offered at a local club are tennis (T), badminton (B), and squash (S). The Venn diagram alongside shows the number of members involved in these activities.

19	Mathematics exam result	0 - 39	40 - 79	80 - 100	(correct 2nd row of the table)

19 c To determine the value of χ^2_{calc} , the university lecturer constructs a table of observed frequency values f_o and expected frequency values f_e .

f_o	f_e	$f_o - f_e$	$(f_o - f_e)^2$	$\frac{(f_o - f_e)^2}{f_e}$	(correct text and table heading)

38 d The table gives some values for the intensity of light at different depths.

Depth (d metres)	10	20	30	50
Intensity (L units)	5.99	3.58	2.15	0.769

- 41 c Calculate the profit made when the shoes are sold for \$100 per pair.
 e Calculate to the nearest dollar the selling price that will maximise the profit, and find the maximum profit in this case.

45

	f_o	f_e	$f_o - f_e$	$(f_o - f_e)^2$	$\frac{(f_o - f_e)^2}{f_e}$
tall and heavy	26	20	6	36	1.8
short and heavy	18	24	-6	36	1.5
tall and light	14	20	-6	36	1.8
short and light	30	a	b	c	d

50 e Hence, predict to the nearest 1% the average test result in Chemistry for a student who achieved an average test result of 85% in Physics.

57 d Using the results of b and c, show that the total profit for the sale of N chairs is given by $P = -100x^2 + 13000x - 400000$ euros.

EXERCISE 2B

6 b 77°F

REVIEW SET 2A

11 Upper: 52 cm Lower: 48 cm

REVIEW SET 2C

10 a Actual area $\approx 6.16 \text{ m}^2$, Calculated area $\approx 7.07 \text{ m}^2$

EXERCISE 3A

1 e $\{3, 8, 6\} \not\subseteq \{1, 2, 3, 4, 5, 6\}$

EXERCISE 4A.2

1 g $\frac{y^6}{27z^3}$

EXERCISE 4A.3

3 c $6x^3 + 3x^4$

EXERCISE 6A

1 f $\sqrt{250}$ km

EXERCISE 6D

6 b 18 500 cm²

9 a 73.9 m

EXERCISE 7E.4

6 c $\frac{3}{25}$

EXERCISE 7H (remove circle)

4 d ≈ 25 students

EXERCISE 7J.2

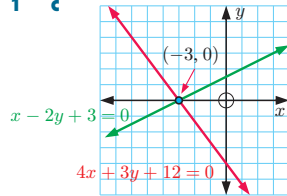
- 2 $\bar{x} \approx 14.5$ years, $s_n \approx 1.75$ years

EXERCISE 8B

- 3 b $(\frac{5}{2}, 4)$

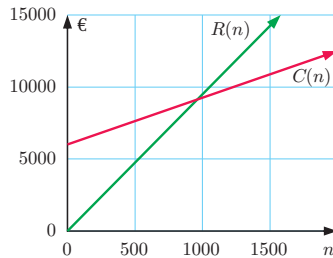
EXERCISE 8G.2 (correct graph)

- 1 c

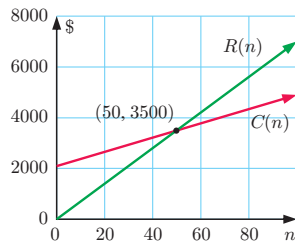


EXERCISE 10E (correct vertical axis labels)

- 11 b



- 12 b



EXERCISE 11G

- 2 b Hemisphere surface area $\approx 4.02 \text{ m}^2$ d 3890 kg
 Cylinder surface area $\approx 9.05 \text{ m}^2$
 Cone surface area $\approx 2.67 \text{ m}^2$
 3 a 16.8 m

EXERCISE 14E.3

- 3 b $d = -2.7$, the cattle eat 2.7 tonnes of hay each day.

EXERCISE 14E.4

- 4 a $\approx 949\,000$

EXERCISE 15D

- 3 a ¥30 013

REVIEW SET 7B

- 4 c $\bar{x} \approx £350$, $s_n \approx £17.80$
 6 a $\bar{x} \approx 48.6$ min, $s_n \approx 7.63$ min

EXERCISE 8F.1

- 5 d $4x - 5y - 10 = 0$

REVIEW SET 8D

- 10 c gradient of PM = $-\frac{1}{3}$, gradient of QR = 3

EXERCISE 11C.3

- 5 a $BC = \frac{100}{x}$ m b Length of netting = AB + BC + CD
 c $x \approx 7.07$ $\therefore L = x + \frac{100}{x} + x$
 $= 2x + \frac{100}{x}$ m

EXERCISE 13J

- 1 $C \approx 62.1^\circ$ or 117.9° 2 $P \approx 23.0^\circ$
 3 a $A \approx 34.8^\circ$ b $B \approx 53.5^\circ$ or 126°
 c $C \approx 84.1^\circ$ or 95.9°

EXERCISE 13K

- 10 a i 5.63 km ii 115°
 b i Esko ii 3 min 41 s c 295°

REVIEW SET 14C

- 6 b 2016

EXERCISE 15C.1

- 2 b £763.30

EXERCISE 17A.1

- 2 f i $-s$: The difference between two odd numbers is not always even.

EXERCISE 17B.2

- 3 a** $p \vee q$: Meryn will visit Japan or Singapore, but not both, next year
b $p \vee q$: Ann will invite Kate or Tracy, but not both, to her party
7 b p : Phillip likes icecream. q : Phillip likes jelly.
 $p \vee \neg q$: Phillip likes icecream or Phillip does not like jelly.

EXERCISE 18F

- 4 b** 105.8 cents L^{-1}

EXERCISE 21A.2

- 2 a ii** 4.5 beetles per g

EXERCISE 21E

- 2 b** $(\frac{1}{3}, -\frac{23}{27})$ and $(-1, -1)$

EXERCISE 21F

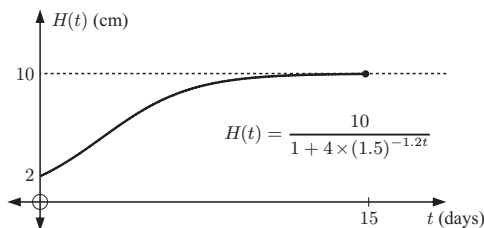
- 4 a** $t = 0$, $t \approx 2.76$ and $t \approx 7.24$ minutes

EXERCISE 23D

- 8 e** $x = 30^\circ, 150^\circ$ or 270°

REVIEW SET 23A (correct axis labels)

- 5 a**



EXERCISE 24A

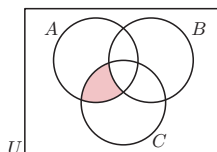
- 59 b ii** $x = 0^\circ$
61 c Since $p > 0.05$, we do not reject H_0 . At a 5% level of significance, *travel time* and *quality of work* are independent.

EXERCISE 24A

- 122 c** $x = 174$

EXERCISE 24B (correct question numbering)

- 22 b iii**



EXERCISE 24B

- 33 h i** 12.5 **ii** 6.19 **i** 0.367 (correct question numbering)
41 e \$91 per pair, \$51 756 profit

REVIEW SET 17B

- 3 d** If this equation has a solution, then the solution is not a real solution.

REVIEW SET 19A

- 3 d** during 1994

EXERCISE 22A.1

- 2 j** increasing: $x \leq 0.268$, $x \geq 3.732$

EXERCISE 22A.2

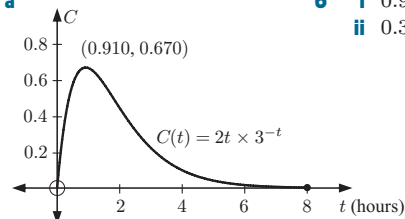
- 1 e** For **b** we have intervals where the function is increasing (+) or decreasing (-). For **d** we have intervals where the function is above (+) or below (-) the x -axis.

EXERCISE 22B.1

- 3 a** $B'(t) = 0.6t + 30$ thousand per day
 $B'(t)$ is the instantaneous rate of growth of the bacteria.
b $B'(3) = 31.8$
 After 3 days, the bacteria are increasing at a rate of 31.8 thousand per day.

EXERCISE 24A

- 41 a** **i** $0.910 \leq t \leq 8$
ii $0.379 < t < 1.79$



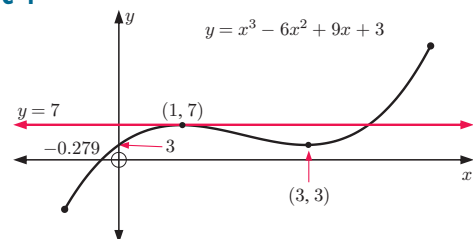
- 43 a i** d, s **ii** h, k **iii** a, b, d, h, k, r, s **iv** f, g

EXERCISE 24A (correct question numbering)

- 112 a i** 35 750 MXN **ii** 1787.50 EUR
b i 1 EUR = 1.54 USD **ii** 1 EUR = 20 MXN
c 102 000 MXN

EXERCISE 24B

- 6 d, e i**



EXERCISE 24B

- 60 a** H_0 : *movie type* and *gender* are independent.