

Mathematics: applications and interpretation HL

Updates

All of the updates on this list have been made to the Online Course Book and may also be included in your Print Course Book, depending on when it was printed.

Chapter 1			
Section	Page	Exercise / question	Correction
In chapter	16	1D, 6	Typo of 'nearest' corrected
In chapter	18	Example 9	Instructions should say $DF = 14$, not $EF = 14$
In chapter	20	Example 11, b	'rather than the nearer' added to the end of the Q
In chapter	20	Example 11, worked solution (a)	Third line - should be 850 not 950
In chapter	21	Investigation 5, diagram	Diagram should show 54.0 NOT 54.8
In chapter	25	1F, Q2	Changed to: 'find all possible values for the other sides and angles.'
In chapter	26	1G, Q1	Removed 'the' from the first line
In chapter	36	1I, Q4c	Change to \$16 per litre
In chapter	39	Chapter review, 7	Rewritten as follows: 'Determine the length of the hour hand if the tip of the hand moves at the speed of light. Express ...'
In chapter	40	Chapter review, 10b	Change to wording of question to: 'Determine the time taken for the journey from Alphaville (A) to Betatown (B) via J in terms of θ .'
In chapter	40	Exam-style questions, 11	AMP should be lower case x 2
Answers	765	1A, 1i	1.2 NOT 7.3
Answers	765	1A, 1ii	1.16 NOT 7.27
Answers	765	1B, 1b	3.15 - 3.25 m (NOT 3.25 - 3.25 m)
Answers	765	1B, 3a	Group 1: 0.517 (3 s.f.) Group 2: 0.437 (3 s.f.)
Answers	765	1B, 3b	Group 1: 14.3% (3 s.f.) Group 2: 3.39% (3 s.f.)
Answers	765	1C, 1aii	Correct to: 9.936×10^4
Answers	765	1C, 1bi	Correct to: 1×10^{10}
Answers	765	1C, 1bii	9.667×10^9 (3 d.p.)
Answers	765	1C, 3b	Equal to 7 added
Answers	765	1C, 3cii	1x added
Answers	765	1C, 5b	Correct to: 1130
Answers	765	1D, 1b	Correct to: $x = 15.1$ (NOT 6.88)
Answers	765	1D, 5	Correct to: 1.02m (NOT 1.62)
Answers	765	1D, 7	Corrected answer to: 44.5 km = 44,500 m (3 s.f.)
Answers	765	1D, 8a	Amend to: 120 cm = 1.2 m

Answers	765	1D, 8b	Amend to: 2.08% (3 s.f.)
Answers	765	1E, 1ai	On diagram, correct angle from 110 to 101
Answers	765	1E, 1aiii	Correct to - BC= 11.0cm (NOT 10.7cm)
Answers	765	1E, biii	3 x corrections to answer
Answers	766	1E, ci	Replaced diagram
Answers	766	1E, ciii	76 degrees (not 64); 52 degrees deleted & HI=257 (NOT 183)
Answers	766	1E, 3	PQ=10.2 (NOT 59); QT=8.01 (NOT 46); PT=2.99 (NOT 17)
Answers	766	1E, 5	952m (not 382)
Answers	766	1F, 1c	323 degrees 11.1 (not 11.11); 39.2 (not 39); 87.8 (not 88)
Answers	766	1F, 1d	corrected to: 40°, 60°, 80°, 16.3m, 22.0m
Answers	766	1F, 2	Name corrected from Kristian to Velina; further corrections in the working
			Replace with: AC=42.7
			then add second set of solutions C<with a hat>=113°, B<with a hat>=31.6°, AC=22.8
Answers	766	1F, 3	correct to: 32.0, 97.1, 50.9
Answers	766	1F, 4a	6cm deleted
Answers	766	1F, 4b	13.1cm (not 5cm)
Answers	766	1F, 5 & 6	answers added in
Answers	766	1G,Q1ai	6.11cm (not 6)
Answers	766	1G,Q1aii	15.27cm (not 15)
Answers	766	1G, 1bi	3.14 (not 3)
Answers	766	1G, 1bii	6.28 (not 6)
Answers	766	1G, 1ci	23.82 (not 23.8)
Answers	766	1G, 1cii	125.07 (not 125)
Answers	766	1G, 2	32.7 (not 62.7)
Answers	766	1G, 3c	24.2 (not 24)
Answers	766	1G, 4a	correct to: 173 degrees
Answers	766	1G, 4b	7.59 cm NOT 24 cm
Answers	766	1G. 5a	18.3 (NOT 18)
Answers	766	1G, 5b	41.1 (not 41)
Answers	766	1G 6	1.13 (not 1.1)
Answers	766	1H, 1b	1490 (not 1500)
Answers	766	1H, 1c	3140 (not 3150)
Answers	766	1H, 3ai	1.41 (not 1.4)
Answers	766	1H, 3aii	1.09 (not 1.0868)
Answers	766	1H, 3aiii	8.66 (not 8.661)
Answers	766	1H, 4a	1630000 (not 704 000)
Answers	766	1H, 4b	7.22 (not 3.15)
Answers	766	1I, 1a	154 (not 150)
Answers	766	1I, 1b	176 (not 180)
Answers	766	1I, 1d	37.0 (not 32)
Answers	766	1I, 2ii	10.6 (not 5.28)
Answers	766	1I, 2iii	37.8 (not 38)
Answers	766	1I, 4a	correct to: $8.73 \times 10^6 \text{ cm}^2$

Answers	766	1I, 6a	A=755 (not 750)
Answers	766	1I, 6b	V=279 (not 280)
			A=236 (not 240)
Answers	766	1I, 7b	33.3l (not 37l)
Answers	766	1I, 8	V= 211.5 (not 213); A=210 (not 24)
Answers	766	Chapter review 1di	1.8 (not 0.2)
Answers	766	Chapter review 1dii	1.82 (not 0.248)
Answers	766	Chapter review 2a	5.64% (not 5.6)
Answers	766	Chapter review 3	1.154171495 (not 1.1541)
Answers	766	Chapter review 5	angle of elevation = 2.67 (not 2.7)
			angle of depression = 0.775 (not 0.77)
Answers	767	Chapter review 9d	Various corrections to question
Answers	767	Chapter review 10a & 10b	Replaced with answer in worked solutions
Answers	767	Exam-style questions, 12c	$9y^4$ (not 2)
Answers	767	Exam-style questions, 13c	9.78 (not 9.8)
Answers	767	Exam-style questions, 17a	56 degrees (not 34)
Answers	767	Exam-style questions, 17c	68.9 (not 112)
Answers	767	Exam-style questions, 17d	1407 (not 1400)
Answers	767	Exam-style questions, 17e	843 (not 840)

Chapter 2

Section	Page	Exercise / question	Correction
In chapter	58	2C, Q1	Added part (a) and (b)
In chapter	58	2C, Q2b	Delete 'and the median'
In chapter	62	2D, Q2b	Only find the mean - rest deleted
In chapter	62	2D, Q2c	Rewrite as: given that: the quickest time was 26 minutes, the longest time was 84 minutes, the lower quartile 32, the median 40 and the upper quartile 50 minutes, estimate the number of outliers and explain why they cannot be shown on your box and whisker plot.
In chapter	65	2E, 2d	Changed to: the maximum possible number of outliers (m) not (cm)
In chapter	72	2F, Q3	
In chapter	79	Exam-style questions, 14c & d	Parts c and need to be swapped over as the standard deviation is found first
Answers	767	2A	Renumbering of answers
Answers	767	2A, 3	reword as: age, socioeconomic class, income, gender, education level or geographical region
Answers	767	2B, 2a	mode=2 (not 6)
Answers	767	2B, 3b	standard deviation = 4.0957 (NOT 4.0958)
Answers	767	2B, 4a	standard deviation= 10.3116 (NOT 10.2541)

Answers	768	2B, 5	'Boys' and 'Girls' changed to 'Robotics' and 'Astronomy' respectively; Extra text added after table, as follows: The calculations partly support Mr Jones' claim as the mean and median are both higher for the robotics club, but the standard deviation is much lower for Astronomy students, and in fact the two lowest scoring students both do Robotics.
Answers	768	2B, 8C	Text amended to say: For students with high marks, the methods give relatively similar marks. For middling students, the methods vary a bit. For low scoring students, the methods vary wildly, indeed, if a student had a mark of 6 or lower, their new mark would be negative with Miss Ginger's methodology.
Answers	768	2C, 1aiii	105 (not 119.29)
Answers	768	2C, 1bii	54.417 (not 54.4167)
Answers	768	2C, 1biii	52.5 (not 53.913);
Answers	768	2C, 1cii	5.864 (not 5.8636)
Answers	768	2C, 1ciii	5.5 (not 5.9286; explanation replaced with the following: The GDC treats the data as discrete and takes each value as being equal to the mid-point. This means the median will always be in the middle of the class in which it lies which may not always be appropriate.
Answers	768	2C, 2b	median deleted
Answers	768	2C, 2c	standard deviation= £10.116 (not 10.1158)
Answers	768	2C, 2d	variance = 102.333 (not 101.329)
Answers	768	2C, 3b	standard deviation = 10.998 (not 10.9982)
Answers	768	2C, 4a	Males mean = \$2546; standard deviation = \$730 (not 729.767) Females mean = \$2115 (not 2114.58); standard deviation = \$635 (not 635.257)
Answers	768	2D, 2b	Mean = 42.5 (not 42.45)
Answers	768	2D, Q2c	Added the text below above the diagram in part c: At least 5 outliers, and estimated 7 outliers. These cannot be shown as their values are not known Change to: The data is not symmetrical as it is largely to the right of the range Added 0 to the graph axis
Answers	768	2D, 3b	Corrected to: There may be up to 3 outliers in the group $28 \leq x < 32$.
Answers	769	2E, 1b	Corrected to: A book for adults because it is more linguistically advanced than a children's book
Answers	769	2E, 2d	missing points added to graph: (154,61) and (184,88).
Answers	769	2E, 2g	
Answers	769	2F, 2a	

Answers	770	2F, 3b	Green dot (not red dot)
Answers	770	2F, 3g	No. From the heights, it is likely that the people surveyed were children. Older children would likely be taller and would be expected to have a better vocabulary.
Answers	770	Chapter review, 1a	Males mean = 13.317 (not 13.32)
Answers	770	Chapter review, 1b	Females mean = 15.850 (not 15.85)
Answers	770	Chapter review, 1d	Mean= 14.330 (not 14.33); standard deviation = 3.940 (not 3.9397)
Answers	770	Chapter review, 1e	Select alternately every 2nd then 3rd piece of data. Final answers will vary depending on first value chosen. change to:
Answers	770	Chapter review, 1f	Take 24 male swimmers and 16 female swimmers. Answers for mean and standard deviation will vary.
Answers	770	Chapter review, 2	Answers will vary CHANGE TO:
			a
			Mean = 54.8 cm
			Median = 56 cm
			Mode = 32 cm
			Median because the data are not symmetrical (positively skewed).
			b
			Mean = \$122.25
			Median = \$87.5
			Mode = \$62
			Median because the data are not symmetrical (positively skewed).
			c
			Mean = 6.421 hours
			Median = 6 hours
			Mode = 6 hours
			Mean because the data are approximately symmetrical and the mean uses all the data.
Answers	770	Chapter review, 3b	add cm to median (55cm); mean= 54.417cm (not 54.4167); standard deviation= 11.277 cm (not 11.2765)
Answers	770	Chapter review, 4b	\$3250 (not \$3249.62)
Answers	770	Chapter review, 4di	Amended text to read: Y-axis does not start at zero. Graph is misleading as it looks like profit was multiple times higher in each year.
Answers	770	Chapter review, 4dii	word 'more' changed to 'faster'
Answers	770	Chapter review, 5a	standard deviation = 7.505 (not 7.5054)
Answers	770	Chapter review, 5b	IQR= 12 (not 22)
Answers	770	Chapter review, 6a	girls mean = 16.2 (not 16.24)
			Q3 range = 24.5 (not 24)
			Range = 28 (not 25)
			Boys mean = 24.5
			Q1 = 33 (not 31)
			Range = 43 (not 16)

Answers	771	Chapter review, 7c	IQR = 22 (not 32)
Answers	771	Chapter review, 8a	Mean = 6.13 min (not 6.1326) Standard deviation = 0.921 min (not 0.9213)
Answers	771	Exam-style questions, 11b	13.4 (not 13.375)
Answers	771	Exam-style questions, 11e	24.0 (not 23.583)
Answers	771	Exam-style questions, 12a	mean = 26.3 (not 23.5833)
Answers	771	Exam-style questions, 12b	standard deviation = 3.38 (not 3.3778)
Answers	771	Exam-style questions, 12c	mean = 22.8 (not 22.8333)
Answers	771	Exam-style questions, 12d	standard deviation = 5.52 (not 5.5202)
Answers	771	Exam-style questions, 12e	mean temperature in Tenerife = 23.6 (not 23.58) mean temperature in Malta = 22.8 (not 22.83) standard deviation = 5.52 and 3.38 (not 5.5202 and 3.3778)
Answers	771	Exam-style questions, 13a	min added
Answers	771	Exam-style questions, 13b	min added
Answers	771	Exam-style questions, 13c	83 min (not 81)
Answers	771	Exam-style questions, 13d	min added
Answers	771	Exam-style questions, 14b	35.8 cm (not 35.8333)
Answers	771	Exam-style questions, 14c	63.9 (not 63.89) swap to be 14d
Answers	771	Exam-style questions, 14d	7.99 (not 7.9931) swap to be 14c
Answers	771	Exam-style questions, 14e	3.7 (not 3.73)
Answers	772	Exam-style questions, 15b	13.7, \$927 (not 13.667, 926.667)
Answers	772	Exam-style questions, 15c	$r = 0.944$ (not 0.9441)
Answers	772	Exam-style questions, 17a	-0.766 strong negative correlation (NOT - 0.7659)
Answers	772	Exam-style questions, 17b	(106600, 2.49)
Answers	772	Exam-style questions, 17c	text amended to say: The extrapolation is for much further than the data provided and the decrease in salary with distance may not be linear.

Chapter 3

Section	Page	Exercise / question	Correction
In chapter	88	3B, Q4	Change to: 'The western and eastern boundaries of the city ...'
In chapter	91	3D	Where possible find solutions to ... [where possible added]
In chapter	95	3E, 6	Change coordinates of first town to (1,16) instead of (5,18)
In chapter	95	3E, 6b	Changed the final sentence of the question to: Find the position the station should be built and the total distance from the two towns to the station.

In chapter	103	3G, 5	Change wording of rubric to read: Each unit of the axes represents 10 km (instead of: The axes are measure in 10km sections)
			Correct rubric to say 'stations' rather than 'towns' directly under the diagram. Added that the roads are not shown on the diagram.
In chapter	108	3I, 5	'which are in metres' added to the rubric
In chapter	108	3I, 5a	Find his displacement VECTOR (word 'vector' added)
In chapter	111	3J, 5	Word 'by' inserted into rubric. ('followed BY 3km south-east')
In chapter	114	3L, 4a	values (not value)
In chapter	114	3L, 4b	Find the LENGTHS OF CA and CB ('lengths of' added)
In chapter	117	3, Example 10	Area = $\sqrt{75}$ (NOT 51) = 8.66 (NOT 7.14)
In chapter	126	3O, 1	Word 'and' added into question intro
In chapter	126	3O, 5cii	Word 'and' added
In chapter	130	Chapter review, 3b	Bisector of AC (not BC)
In chapter	130	Chapter review, 7	An irregular tetrahedron (word 'irregular' added)
In chapter	130	Chapter review, 9	A plane A is flying north-east such that its speed over the ground is 750 kmh ⁻¹ ... ('such that its speed over the ground is' added in)
In chapter	131	Exam-style questions, 10b	Missing space added in
In chapter	132	Exam-style questions, 17f	Word 'any' deleted
In chapter	138	Paper 3 questions and comments	Hint box - duplicate word 'can' deleted
Answers	772	Skills Check 4aii	25.0 (NOT 25)
Answers	772	3B, 2b	-2x (Not -0.2x)
Answers	772	3B, 2d	minus rather than plus 1
Answers	772	3C, 2bi	$y - 4 = -x$
Answers	772	3C, 2bii	$y = -x + 4$
Answers	772	3C, 2biii	$x + y - 4 = 0$
Answers	772	3C, 2cii	minus rather than plus y
Answers	772	3D, 1aii	The two equations represent the same line
Answers	773	3D, 2cii	141 seconds or 2 minutes 21 seconds (NOT 174 seconds)
Answers	773	3D, 4b	$0.0699x + 55.5$ (NOT $0.069927x + 55.55$)
Answers	773	3D, 4c	55.5 (not 55.55)
Answers	773	3D, 4d	94 (not 94.4)
Answers	773	3E, 3	word 'a' added in ('a triangle')
Answers	773	3E, 6a	Distance is 17.9 km (added after the coordinates)
Answers	773	3E, 6b	(9.33, 19.3), 18.0 km
Answers	773	3F, 3b	Move fig to before answer (i) and delete point B 1
Answers	774	3G, 5aii	0.290 (not 0.289)
Answers	774	3G, 5cii	Diagram -The outlier needs to be removed but also the lower 'whisker' needs to be extended to 2.1 where the outlier is now.
Answers	774	3G, 5d	one outlier' replaced with 'the lowest'

Answers	774	3H, 3c	The previous answer to this question was deleted
Answers	775	3I, 2a	split into parts i) and ii)
Answers	775	3I, 1bii	243 (not 297)
Answers	775	3I, 1dii	7.13 (not 7.1)
Answers	775	3I, 4a	141 (not 141.4) in both instances
Answers	775	3I, 5	261 degrees (not 260)
Answers	775	3L, 2b	151 degrees (not 151.3)
Answers	775	3L, 4b	Inside the first root should read: $0^2 + (-1)^2 + 0^2$
			Inside the second root should read: 1^2
			Inside the third root should read: $1^2 + 3^2$
			BC=10
Answers	775	3M, 1b	$a c = (2 \times 5) + (1 \times -1) + (3 \times -3)$
Answers	775	3M, 1b	$b c = (1 \times 5) + (-1 \times -1) + (2 \times -3)$
Answers	775	3M, 4	root should be 30 (not 42), = 2.74 (not 3.24)
Answers	775	3M, 5b	=25.3 (not 25.2)
Answers	776	3N, 1a	minus sign deleted from 3 in final bracket
Answers	776	3O 8d	t=11:00
Answers	776	Chapter review, 3a	y = 4
Answers	776	Chapter review, 3c	Replaced with diagram in worked solutions
Answers	776	Chapter review, 3d	replace with $y = 2x - 2.5$
Answers	776	Chapter review, 3e	Redraw diagram to match that in worked solutions
Answers	777	Chapter review, 4c	218 (not 217) km
Answers	777	Chapter review, 7	0.583 (not 1.17)
Answers	777	Chapter review, 8b	82.4 (not 82.5)
Answers	777	Chapter review, 9a	replace with $rA = (0 \ 0 \ 8.2) + t(530.3 \ 530.3 \ 2)$ written as vectors, as in the worked solutions
Answers	777	Chapter review, 9b	693 (not 692.8) - in the final bracket
Answers	777	Exam-style questions, 15cii	73.4 (NOT 64.6)
Answers	777	Exam-style questions, 17b	m^2 (NOT km)

Chapter 4

Section	Page	Exercise / question	Correction
In chapter	150	4B, 3	newtons should be lower case
In chapter	152	New Hint box	Add with the following text: The domain and range can be written simply as an inequality but you may also see the following notation $0 \leq x < 5$, $x \in [0, 5]$, $\{x 0 \leq x < 5\}$, $x \geq 4$ etc
In chapter	153	4C, 1	Following added to the rubric: The table shows the temperature for some of the days in January.

In chapter	153	4C, 1c	Intro text to this Q changed to: Based on the table below write down a possible set for the range of T.
In chapter	153	4C, 3c	correction to 'y' axis of graph (duplicate 4 at the top should become 6)
In chapter	154	4C, Q5	3.81 (rather than 3.82, for the first value), and all months that read 'Jun' should be 'Jul'
			In rubric below table, should read 'since January 2014' and 'until January 2019' (January added in both instances)
In chapter	154	4C, 7a	Delete last line from table
In chapter	158-159	4D, 6	Specify January (added the month in three instances in the question, and also on the x axis of the graph on page 159)
In chapter	167	4G, 3d	Change to rubric - should read 'it is the evening of January 3rd'
In chapter	167	4G, 3dii	Specify to the nearest dollar
In chapter	169	NA	Reverse the arrow on the RHS in the yellow box so that it goes from B to A
In chapter	177	4J, 2	Specify that the example is on page 174
In chapter	177	4J, 3c	Diagram amended, new reference given
In chapter	177	4J, 6	Diagram amended, new reference given
In chapter	179	Investigation 11	$u_1 < 1$ subscript rather than a_1
In chapter	180	Example 14	13.48 into the ground (not 13.6)
			14a - specify 'further strikes' and not 'strikes'
In chapter	180	4K, 1c	115 (not 95)
In chapter	181	4K, 5	Reword intro text as: The height of a sequoia tree is measured once a year. It was 2.6m tall when it was planted in 1998, and grows at a rate of 1.22 metres per year
In chapter	181	4K, 5a	Change to n years
In chapter	181	4K, 5c	Change 'reach' to 'first exceed'
In chapter	191	Investigation 13	Question 7 replaced with the lines below.
			Technology, including your GDC, is able to find the line that has the smallest sum of square residuals. This is known as the least squares regression line.
In chapter	193	4P, 1d	'equation IS' (not equation BE)
In chapter	198	Chapter review, 2	replace 'one-to-one' function with 'linear' function
In chapter	201	Exam-style questions, 14a	'a' should be in italics
In chapter	201	Exam-style questions, 15	IB notation so replace with $\text{gof}(x)$
Answers	777	4A, 1b	change to read: because for each month, there is exactly one value for the number of people with a birthday in it
Answers	777	4A, 2e	Add: for each x value, there is a unique y value
Answers	777	4A, 4d	add: because for each x value, there is a unique y value.
Answers	778	4B, 3ai	add in: 'This is Jamie's weight at sea level'

Answers	778	4B, 3aii	N to be upright
Answers	778	4B, 3b	the force of gravity on Jaime (instead of 'gravity's force')
Answers	778	4C, 1c	change to: The range needs to include all the values in the table, for example, $20 \leq T \leq 30$ $y \in [-3, 5]$ or $-3 \leq y \leq 5$
Answers	778	4c. 2d	Domain: $-8 \leq x \leq 6$, range: $-4 \leq y \leq 3$
Answers	778	4C, 3b	remove x:, y: and additional brackets
Answers	778	4C, 3c	remove x:, y: and additional brackets
Answers	778	4C, 3d	first half of answer (before comma) deleted
Answers	778	4C, 4a	12.8 kg (not 12.75); 10.7 kg (not 10.67)
Answers	778	4C, 4c	10.7 (not 10.67); 12.8 (not 12.75)
Answers	778	4C, 4d	8 (not 6)
Answers	778	4C, 5b	1.23 (not 1.2) and 3.81 (not 3.9)
Answers	778	4C, 5c	\$3.08 (not £2.09)
Answers	778	4C, 6a	add in: $R(2500) =$
Answers	778	4C, 6e	amend symbols to \leq
Answers	779	4D, 7c	to the power -2 (not 1)
Answers	779	4E, 1a	4.76 (NOT 4.67)
Answers	779	4e, 1B	4.76 (NOT 4.67)
Answers	779	4f, 1A	correct to: $u(x) = 1.33x$
Answers	779	4F, 1cii	correct to: $B(x) = 1.33x - 3.28$
Answers	779	4F, 2c	add in Euros as units
Answers	779	4F, 2d	change x to p
Answers	779	4F, 2e	change y to N
Answers	779	4F, 3c	change \$ to euros
Answers	779	4F, 4a	change 5 to 15 in the equation
			amend to: x = number of portions of Pepperoni, where 1 portion is 100 g
			y = number of portions of Parma ham, where 1 portion is 100 g
Answers	779	4F 4b	7.14 (not 8.33)
Answers	779	4G, 1e	Domain: $-5 \leq x < 7$, range: $-11 \leq y \leq 3$
Answers	779	4G, 2a	symbol changed to \leq
Answers	779	4G, dii	\$23 (not £22.80)
Answers	779	4H, 1c	\approx rather than =
Answers	779	4H, 2a	Domain: $-6 \leq x \leq 6$
			Range: $2 \leq y \leq 8$
Answers	780	4I, 3cii	16.34 or 4.34 (not 16.33 or 4.33)
Answers	780	4J, 2a	correct 1.10 to 1.1 in both instances
Answers	780	4J, 2b	correct 'rest' to 'other parts'
Answers	780	4J, 3c	3.5x (rather than 4x)
Answers	780	4K, 3a	u rather than a (n still subscript)
Answers	780	4K, 5c	2065
Answers	780	4L, 3b	Technology, including your GDC, is able to find the line that has the smallest sum of square residuals. This is known as the least squares regression line.
Answers	780	4L, 3d	change a to u
Answers	781	4L, 6a	change a to u
Answers	781	4L, 6b	change a to u
Answers	781	4L, 6c	amend to: $u_9 = 2u_3$

Answers	781	4M, 1	\$1593 (not \$1350)
Answers	781	4M, 2	correct to a thin space
Answers	781	4N, 4b	Add parentheses as in worked answer
Answers	781	4N, 6a	7.5km (not 8km)
Answers	781	4N, 6b	97.5 km (not 105 km)
Answers	781	4O, 2	-4.2% (not -4.17)
Answers	781	4P, 1c	29.04 euros (not 29.4)
Answers	781	4Q, 1d	replace 'data values' with 'range of the data'
Answers	781	4Q, 2dii	replace current explanation with: Invalid, can use this regression to predict only the temperature from a known number of chirps delete 'approximately'
Answers	782	Chapter review, 6bii	delete 'approximately'
Answers	782	Chapter review, 8c	add parts i) and ii) - delete extra working
Answers	782	Chapter review, 9b	$f^{-1}(x)$ has two values when $4 < x < 7$, hence it is not a function.
Answers	783	Exam-style questions, 10c	127 (not 126.67)
Answers	783	Exam-style questions, 10d	86.7 (not 86.67)
Answers	783	Exam-style questions, 11b	replace colon with pipe
Answers	783	Exam-style questions, 12aii	strong positive (remove 'correlation')
Answers	783	Exam-style questions, 12bi	$r=0.267$ (not 0.26)
Answers	783	Exam-style questions, 12bii	weak positive (remove 'correlation')
Answers	783	Exam-style questions, 15a	replace with answers in the worked solutions
Answers	783	Exam-style questions, 15b	replace with answers in the worked solutions
Answers	783	Exam-style questions, 15c	amend to $x = \pm 1.73$ with the \pm root 3 in brackets afterwards.

Chapter 5

Section	Page	Exercise / question	Correction
In chapter	218	Investigation 4	Second yellow box on this page, second line, Change <i>A</i> to <i>B</i>
In chapter	220	5C, 1c	Wording of Q changed to: Throw a fair die numbered 1, 2, 3, 4, 5, 6. D is the event that the number is prime. E is the event that the number is even.
In chapter	220	5C, 1e	Wording of Q changed to: Choose a number at random from {1, 2, 3, 4, 5, 6, 7, 8, 9, 10}. G is the event that the number is at most 6. H is the event that the number is at least 7.
In chapter	220	5C, 1f	Wording of Q changed to: Choose a number at random from {1, 2, 3, 4, 5, 6, 7, 8, 9, 10}. M is the event that the number is no more than 5. H is the event that the number is 4 or more.
In chapter	224	5D, 6a	Add in: Ignore leap years.
Answers	783	5A, 2b	7/10 (rather than 3/5)
Answers	783	5A, 3c	ADD in answer: 544

Answers	783	5A, 4c	1/100 (rather than 99/10000)
Answers	783	5B, 1a	1/4 (not 7/20)
Answers	783	5B, 1b	3/16 (not 1/5)
Answers	783	5B, 1c	1/8 (not 3/20)
Answers	783	5B, 1d	1/4 (not 1/3)
Answers	783	5B, 1e	13/36 (not 4/9)
Answers	783	5B, 1f	5/8 (not 1/2)
Answers	783	5B, 2c	4094 (not 3228)
Answers	783	5B, 3a	9/20 (not 9)
Answers	783	5B, 5	Change to: $P(A \text{ beats } B) = 2/3$ $P(B \text{ beats } C) = 2/3$ $P(C \text{ beats } A) = 5/9$ 0.859 (not 0.8831)
Answers	783	5D, 6a	
Answers	784	Exam-style questions, 10a	In the diagram, correct first 0.6 to 0.4 In the diagram, correct second 0.6 to 0.45 In the diagram, correct third 0.6 to 0.55
Answers	784	Exam-style questions, 11	Venn diagram missing. Add in (as in worked solutions)
Answers	784	Exam-style questions, 12c	25/72 (not 25/75)
Answers	784	Exam-style questions, 13a	43/50 (not 28/50)
Answers	784	Exam-style questions, 16c	0.8 (not 0.0889)

Chapter 6

Section	Page	Exercise / question	Correction
In chapter	233	Before you start, Q3	Change $x-6$ to $x-1$; change 'and' to 'or' and answer from 6 to 1.
In chapter	234	6.1 Quadratic models	Author suggests the photograph would be better flipped horizontally - presumably so the motion is left to right as is normal on a graph.
In chapter	235	Example 1	Changes to graph. graph should explicitly show endpoints $(-5,-8)$ and $(3,-8)$ and the grid should cover $-10 < v < 10$
In chapter	237	6A, 2	Change to rubric to read: Find i the coordinates of the vertex ii the range of the function. (as the 2nd sentence) Correct to read: $x \geq 0$
In chapter	237	6A, 4	
In chapter	238	6A, 10c	Change word 'sequence' to 'series'
In chapter	240	6B, 4a	Add commas between the list of numbers
In chapter	240	6B, 6	Change stem of question to read: Marina bought 12 m of decorative fencing to construct a small playground for her daughter in her rectangular 10 m by 8 m backyard. She wants to use all the fencing and is trying to decide how to place the fencing to construct the largest rectangular playground

In chapter	241	6B, 6b	Change stem to read: The second design that she wanted to analyse was that of a rectangular playground with one side being one wall of her backyard, and the other three sides consisting of decorative fencing
In chapter	241	6B, 6 cv	Change to be 6d
In chapter	241	6B, 6c	Add in to stem: 'and the other sides formed by the decorative fencing.'
In chapter	241	6B, 6c	Add brackets to the composite function
In chapter	244	6C, 1	Reword stem as: The domains of the functions below are restricted to $x \geq a$, such that the function is invertible and a is as small as possible. For each function find i the value of a ii the inverse function, stating its domain and range
In chapter	244	6C, 1a, 1b, 1c, 1d	Should be to the power 2 (not 3) in all instances
In chapter	244	6C, 2	Change from soda to plates, to make prices more realistic
In chapter	244	6C, 2a	Various changes to rubric Change rubric from revenue to 'money made by the company when the plates are sold at €p'
In chapter	244	6C, 2c	Add to the end of the rubric: 'and hence the maximum daily profit'.
In chapter	244	6C, 2d	Add in: '...and use it to find the maximum daily profit.'
In chapter	244	6C, 3c	Change 'positive' to 'possible'
In chapter	247	6D, 9	Amend stem to read: 'bring the highest point of the arched part of the stage down by 1 m while keeping the vertical sides at 3 m' 'a new function' rather than 'the new function'
In chapter	248	Quadratic regression	Word 'certain' deleted from second para of second bullet point
In chapter	248	Example 6	Change 'as soon as he has taken' to 'from the time he takes'
In chapter	248	Example 6, h	Can the model be used ...' rather than 'Use the model ...'
In chapter	253	Investigation 2	Mathematical notation should now read: $y = f(x) + , k > 0$ $y = f(x) - k, k > 0$ (etc)
In chapter	254-5	Investigation 2	Multiple changes to add at the end of mathematical notation (as above)

In chapter	256	Example 8	Replace bullets with numbers
In chapter	257	6F, 1d	$=2-(x-2)^2$
In chapter	258	6F, 8	Qs a, b & d changed as follows: a) $(t \circ r \circ f)(x)$ b) $(s \circ t \circ f)(x)$ d) $(s \circ r \circ f)(x)$
In chapter	258	6F, 9b	Delete 'from the equations'
In chapter	260	Example 9	Graph a - needs redrawing. Graph sketched in wrong domain, it should start at (0,-8) and end at (4.8) Re-number a-d Should now read: $T(t) = \dots$ Replace 'y' with $f(x)$
In chapter	261	6G, 7	
In chapter	261	6G, 8	In the stem, replace 'bottom' with 'base' Remove 'at $y = 0$ '
In chapter	262	6G, 13	Replace 'y' with $f(x)$ and replace 'bottom' with 'base' Make 'actual' bold
In chapter	262	6G, 13d	Add in 'with the distance measured in metres'
In chapter	262	6G, 14	Change final sentence to 'and describe the transformations which map $f(x)$ onto this function'
In chapter	262	6G, 14e	Delete everything after the comma in the intro to the question at the bottom of the page
In chapter	262	6G, 14e	Change Q to read:
In chapter	263	6G, 15	Write the function representing the image of $f(x)$ under each of the transformations. Replace stem of Q with: Find a domain under which each of the following functions is invertible, justifying your answer.
In chapter	264	Example 10	Should read 'table below' rather than 'table on next page'
In chapter	265	Example 10	Following comment added below the graph: The model passes through the points supporting the very high value of the coefficient of determination.
In chapter	266	6H, 6a	Amend stem to read: Find the coordinates of the maximum point on the curve change to $y=x-x^2$ Add in part (b)
In chapter	266	6H, 6ai	
In chapter	266	6H, 6b	b. Hence comment on a difference between the shapes of the two curves between $x=0$ and $x=1$

In chapter	266	6H, 7b	Should refer to 'question 6' and not 'part a'
In chapter	266	6H, 7c	Add in part c (answer already there in the back of the book)
In chapter	266	6H, 8	play' rather than 'plays' (remove 's')
In chapter	266	6H, 6b	Add in answer: The quadratic curve is symmetric but the cubic curve is not, the maximum occurs to the right of the centre point.
In chapter	267	6H, 8d	Rephrase question as: Determine the values of the local maximum and minimum points of the function modelling the F-holes of the violin
In chapter	268	6.4	Change 'circumference' to 'area'
In chapter	268	6.4	Add question mark
In chapter	268	6.4 Hint box	Replace with: \geq
In chapter	269	Investigation 4	Point 8 - delete 'and negative'
In chapter	269	Example 11	Part 'I' 'the designer wants' rather than 'the designer want'
In chapter	271	Example 11	Part (h) - change = to: ≈ 1.00
In chapter	271	Example 11	Part (j) Replace with the single equation $=0.0000118x^4-0.0000325x^2+0.000428$
In chapter	271	Direct variation	Delete the word 'be' from the second line
In chapter	272	6I, 3	Change 'another' to 'a similar'
In chapter	273	Investigation 5	Point 5 - REMOVE
In chapter	273	Investigation 5	Point 2 - correct the formatting of the word 'his'
In chapter	277	Example 14 part b	In white box, change 'g' to 'h'
In chapter	277	Example 14 part c	In white box, change 'g' to 'j'
In chapter	278	6J, 9c	Change 'units' to 'unit'
In chapter	279	Chapter summary	State HOW (how added)
In chapter	282	Chapter review, 7	Bullet point 7 - Peter amended to add in $k>0$ (4 times) Change last line of stem to read 'where $x = 0$ on 1 January 2004 and x is the number of years after this date.'
In chapter	282	Chapter review, 7a	$0 \leq x \leq 16$
In chapter	282	Chapter review, 8a	Change 's' to 't'
In chapter	282	Chapter review, 11	This should now read: $t = 5.76 \text{ s}$ Changes to graph: [Points and numbers should have consistent colours. Graph should be sketched only over the domain.]
In chapter	282	Chapter review, 10	Replace text under the graph with: $-4 \leq y \leq 5$
In chapter	283	Chapter review, 18	This needs to change to $P(t)=0.03t^3+0.18t^2-7.9t+63$ Section of stem after 'where' to change to 'with domain $\{1,2,3,4,5,6,7,8,9,10,11,12\}$ '
In chapter	283	Chapter review, 18	Delete parts c, d , e

In chapter	283	Chapter review, 20	Change 'litre of gasoline' to 'a unit of electricity (Kwh) from renewable sources'
In chapter	283	Chapter review, 20	Change euros to cents in table
In chapter	283	Chapter review, 20a	Change question to read: Find a cubic model for this data, using a variable t , where t is measuring years after 2006.
In chapter	283	Chapter review, 20a	Change 'gasoline' to 'electricity'
In chapter	284	Exam-style questions, 23a	Equation amended to $x^2 - k^2 + 36 = 0$
In chapter	284	Exam-style questions, 23b	Change equation to: $x^2 - k^2 - 36 = 0$
In chapter	284	Exam-style questions, 24	Brackets are not needed in the numerator.
In chapter	285	Exam-style questions, 28d	Change to 'the range of values for a '
In chapter	286	ATL box	Create' corrected to 'Creating'
Answers	784	6A, 2	Redraw graph so that it extends to go down to show the curve ending at $(-4, -16)$
Answers	785	6A, 3d	Correct 1.255 to 1.25
Answers	785	6A, 5c	$x = 16.8\text{m}$ (rather than 16.79)
Answers	785	6A, 7a	Make it into a negative rather than positive number
Answers	785	6A, 7b	Hyphenate 'left-hand'
Answers	785	6B, 2f	Change 'which' to 'that'
Answers	786	6B, 3b	Also show intercept at $(14.979, 0)$.
Answers	786	6B, 3c	Changes needed to graph - check w/s for reference. if not ask Peter
Answers	786	6B, 3d	Change 'which' to 'that'
Answers	786	6B, 6 cv	Change 'meaningless' to 'impossible'
Answers	786	6C, 1a	Change to be 6d
Answers	786	6C, 1b	<add part i> $i a = 0$ <renumber the current question as ii> <add in part i> $i a = 1$ <current b becomes ii> <add in part i> $i a = -3$ <current part c becomes ii> <add in part i> $i a = 2$ <current part d becomes ii> $P(p) = -3.5p^2 + 192.5p - 1750$, €896.88 (when $p = €27.5$) Add in answer as follows: d. domain $100 \leq P \leq 896.88$, range $12.45 \leq p \leq 28.5$ Author asks that roots $(-3.59, 0)$ and $(-6.41, 0)$ could be shown Change minus sign to plus sign Make question 5 into part 5a Add in answer for Q5b
Answers	786	6C, 1c	
Answers	786	6C, 1d	
Answers	786	6C, 2c	
Answers	786	6C, 2d	
Answers	786	6C, 3a	
Answers	786	6D, 3	
Answers	786	6D, 5a	
Answers	786	6D, 5b	
Answers	787	6D, 9	b $y = -2x^2 + 4x + 4$ Replace with answer from worked solutions $f(x) = -0.104x^2 + 1.67x + 3$
Answers	787	6E, 1a	Delete first graph

Answers	787	6E, 1b	Add answer to this part: $y = -0.0382x^2 + 50.5x - 3744$
Answers	787	6E, 1c	Replace $r=0.988$ with $R^2=0.99$ Delete: $y = -0.0382x^2 + 50.5x - 3743$
Answers	787	6E, 2a	Delete second graph On the first graph, the green dot for the point (5,-100) has been wrongly placed at (5,100) - move to the correct place Add in answer for this question: b $y = -0.895x^2 + 52.2x - 359$
Answers	787	6E, 2c	Replace $r = 0.954$ with $R^2=0.988$
Answers	787	6E, 3a	Delete $v = -0.835x^2 + 47.7x - 282$ 3a should just be the graph
Answers	787	6E, 3b	Add in part 3b as follows: $b y = -0.0382x^2 + 50.5x - 3744$
Answers	787	6E, 3c	16.7 (not 16.6), and replace $r = 0.924$ with $R^2=0.85$
Answers	787	6E, 4a	Should only say 4a (not ab)
Answers	787	6E, 4b	Add in answer for 4b: $y = 0.0008293x^2 - 0.652x + 257$
Answers	787	6E, 4c	Change $r=0.782$ to $R^2=0.612$ Reword explanation to read: suggests only a moderate correlation. Cindy's data clearly contains errors as, for example, the point (550,150) is below (500, 172). The quadratic model is unlikely to be a good fit.
Answers	787	6E, 4d	Replace explanation with: Even though 410m is within the range of the data the model is unlikely to provide a good estimate.
Answers	788	6E, 5a	Add equation to part a: $y = -0.00462x^2 + 0.275x + 12.0$
Answers	788	6E, 5b	Delete second graph 29.8 (not 29.7)
Answers	788	6E, 5c	Replace 'regression is 0.999' with 'determination is 0.998'
Answers	788	6F, 1a	Delete last section - from 'with vector' onward
Answers	788	6F, 1b	Delete last section - from 'with vector' onward (x2)
Answers	788	6F, 1c	Delete last section - from 'with vector' onward (x2)
Answers	788	6F, 1d	Delete and replace with answer in worked solutions
Answers	788	6F, 2b	+2 (not 1)
Answers	788	6F, 2c	+1 (not 2)
Answers	788	6F, 3c	Amend to: (2, 10)
Answers	788	6F, 3d	Amend to $y = 4(x - 2)^2 + 10$
Answers	788	6F, 3e	Replace with answer in worked solutions

Answers	789	6F, 7c	Remove the 'c' so that part b is the final part in this question
Answers	789	6F, 8	Answers to all of Q8 changed in line with the amended Qs
Answers	789	6F, 9ai	(8 , 1) (not 4 , 1)
Answers	789	6F, 9bii	Replace with $(1/2(x-6))^2$, These are the same equation. A translation of 3 done before the stretch is equivalent to a translation of 6 done after the stretch
Answers	789	6G, 1	y-intercept not shown (0,27)
Answers	790	6G, 6a	Graph needs redrawing $(x - 3)^{(1/3)}$
Answers	790	6G, 7	Re-number a-d
Answers	790	6G, 8d	$t > 24$
Answers	790	6G, 9b	Make (4,45) green on the graph
Answers	790	6G, 11a	31.1 (not 31.2)
Answers	790	6G, 11c	20.44 (not 20.45)
Answers	790	6G, 12a	Graph should start at $x=0$ so section of curve to the left of the y-axis should be removed
Answers	790	6G, 12b	1.27 (not 1.427)
Answers	790	6G, 12c	Add 'mm' after 6; height = 1.45mm
Answers	791	6G, 13a	Colours for points and numbers should be consistent. Please make (13, 1.003) green
Answers	791	6G, 13b	26m
Answers	791	6G, 13c	Change 'm' to 'cm'
Answers	791	6G, 13d	Text above the equation should read: Converting from cm to m the transformations are horizontal and vertical stretches of scale factor 2, vertical translation of 24.
			Change the equation to the one in the worked solutions
Answers	791	6G, 14a	<Colours for points and numbers should be consistent. Please make (4,4) green>
Answers	791	6G, 14i	Add in the line 'For the original logo' at the beginning of the first para
			Add in 'For the transformed logo' at the beginning of the second paragraph
Answers	791	6G, 15a	Replace answer with: Any subset of one of $x \leq 1$, $1 \leq x \leq 3$ or $x \geq 3$
Answers	791	6G, 15b	Replace answer with: Any subset of one of $x \leq -0.618$, $-0.618 \leq x \leq 1.618$ or $x \geq 1.618$.
Answers	791	6G, 16	Delete 24.3cm and 44.3 cm
Answers	791	6H, 1d	Change to read 'only very slightly'
Answers	791	6H, 2b	Replace word 'regression' with 'determination'

Answers	792	6H, 6a	Correct answers to: a i (0.5,0.25)
Answers	792	6H, 8a	ii (0.577, 0.385) Change last part of explanation (after final comma) to read: as it is both concave up and down and because it is approximately symmetric about a point
Answers	792	6H, 8d	Change coordinates to read: (6.80, 4.34) (11.6, 4.73)
Answers	792	6H, 10a	Changes to graph: Axes need to be labelled t (not x) and V (not y) graph should begin at t=0 and end at t=12 In equation below graph, change 'x' to 't'
Answers	793	6I, 1e	0.821
Answers	793	6I, 3	524 g
Answers	793	6I, 4	Adjust graphs so that line doesn't continue beyond the green dots x 3
Answers	793	6I, 5c	=1.000 (not 1)
Answers	793	6I, 5d	Amend to 'almost a perfect fit'
Answers	793	6I, 5e	4188.83 cm ³
Answers	793	6I, 5f	Add cm ³ , and the line 'The actual and predicted values are very close.'
Answers	793	6I, 6a	162 (not 132)
Answers	793	6I, 6c	8.29m
Answers	793	6I, 7a	Replace with $f^{-1}(x) = -\sqrt{x}$, $x \geq 0$
Answers	793	6J, 1	V=40Pa
Answers	793	6J, 3a	Delete $-\infty <$
Answers	793	6J, 3b	Re-write line 2 as: $f(x) \geq 0.004115$ Pink line on graph should stop at the dots Replace line under the graph with: $g(x) \geq 0.016$
Answers	793	6J, 3c	Graph should stop with dots at -2 and 2. Please add in the dots, and stop the pink line at this point Change line under graph to $f(x) \geq 1/8192$
Answers	793	6J, 4a	4000 kg/m ³
Answers	793	6J, 4b	17.1 cm
Answers	794	6J, 5c	Replace with answer in worked solutions: $I = 328000/x^{(-2.01)}$, which is correct?
Answers	794	6J, 5d	$R^2 = 1.000$ Change 'appears' to 'is'
Answers	794	6J, 5f	128lux

Answers	794	6J, 6b	Change to: The price of a car is not quite linear since the gradient becomes less steep over time. If it were linear with a suitable gradient, the value of the car would fall much too quickly.
Answers	794	6J, 6e	$R^2=0.958$
Answers	794	6J, 7a	Change 'appears' to 'is'
Answers	794	6J, 7c	Invertible for $x>0$ or $x<0$
Answers	794	6J, 9b	Invertible for $x>0$ or $x<0$
Answers	795	6J, 11ai	Insert: $\pm (x^2)$
Answers	795	6J, 11aii	Thus $n < 0$
Answers	795	Chapter review, 4b	p (rather than $N \times 2$)
Answers	795	Chapter review, 7a	10.0m
			Graph changes: x-intercept at (18.169, 0) not marked.
			Graph needs to stop at $x=16$ with the dot and the vertical line can be removed
Answers	795	Chapter review, 7e	2020 (dependent on graph being changed as above)
Answers	795	Chapter review, 7f	2005
Answers	796	Chapter review, 11a	$a = 14.88 / \sqrt{t}$
Answers	796	Chapter review, 11b	886 s
Answers	796	Chapter review, 14	Change to $< (x^2)$
Answers	796	Chapter review, 15c	$x=3s$
Answers	796	Chapter review, 17	Remove graph
Answers	796	Chapter review, 18a	26.8 mm
Answers	796	Chapter review, 18b	Greatest in January; lowest in August
Answers	796	Chapter review, 18c, d, e	Delete
Answers	796	Chapter review, 19	All graphs should stop at the edge of the domain, indicated by the green dots.
Answers	796	Chapter review, 19b	On graph, should say -256 (not 256)
Answers	796	Chapter review, 20a	Change to equation in worked solutions
Answers	796	Chapter review, 20b	Using this model to predict future electricity prices would be extrapolation, so the model may not apply outside the given domain. It predicts that the price will fall after 2020 but this cannot be relied on without further information.
Answers	796	Chapter review, 20c	31.58 Euros
Answers	797	Chapter review, 22d	10 s; 5 s; 126.8 m
Answers	797	Exam-style questions, 23a	First line of the answer deleted
Answers	797	Exam-style questions, 23b	First line of the answer deleted
Answers	797	Exam-style questions, 24c	Added the inverse function
Answers	797	Exam-style questions, 25c	$73.4 \leq x \leq 80$

Chapter 7

Section	Page	Exercise / question	Correction
In chapter	289	Skills Check, 1	Amend 'find the value of' to 'Simplify'
In chapter	289	Skills Check, 4	Used parentheses to avoid the ambiguity.
In chapter	290	7.1 Geometric sequences and series (part c)	How many matches WILL be played
In chapter	292	7A, 2f	364.5
In chapter	292	7A, 3c	Change '1 year' to '30 days'
In chapter	292	Example 2c	the value of the car WILL ...
In chapter	293	Investigation 2, red box	$(100+p)/100$ (written as a fraction)
In chapter	294	Example 3b	January 2020 (delete 'of')
In chapter	295	7B, 4	Beau spent ... (not spends)
In chapter	295	7B, 7b	Determine the world population 7 years before 2019
In chapter	295	7B, 7e	Calculate the minimum annual
In chapter	295	Investigation 3	Removed sigma notation so the expression goes directly from S_5 to $u_1 + \dots$
In chapter	297	Example 5	Convert r as a percentage, p
In chapter	298	7C, 2d	Determine after how many complete hours the number of bacteria will exceed 1 billion
In chapter	298	7C, 3	number (not plural)
In chapter	299	Example 6	involves (not involve)
In chapter	301	7D, 4e	Comment on whether or not the ball would ever stop bouncing under the proposed model
In chapter	301	7D, 4f	If the bouncing continues indefinitely, calculate the total distance covered by the ball under this model
In chapter	301	7D, 5g	If the process was continued indefinitely, write down the area of the circle that would eventually be shaded. Verify you obtain the same answer by using the formula for the sum of an infinite series.
In chapter	303	Investigation 5	twelfth
In chapter	304	Example 7	replaced 'it' with 'the money' (in column 2)
In chapter	305	Example 7, 2b	23.19 years
In chapter	306	7E, 2	Currency should be ILS (Israeli New Sheqel)
In chapter	306	7E, 5	Calculate using the formula for final value rather than the Finance app on your GDC,
In chapter	307	7E, 7b	Determine (using the formula for final value rather than the Finance app on your GDC), ...
In chapter	307	7E, 8	Juliana is planning to invest an amount of \$2000 at an interest rate of 0.1% compounded yearly
In chapter	307	Annuities and amortization	When a constant payment P is made to an investor from an initial investment earning a constant rate of interest $r\%$ for a number of n periods, it is called an annuity.

In chapter	307	Investigation 6	How does a regular investment represent compounded growth?
In chapter	308	Example 10	The formula for working out the future value of a regular investment is ... Added the following text: Choose the option End to indicate the payments are made at the end of each month. Note: in the exams the payments will always be at the end of the time period.
In chapter	309	Example 10, b	Added note to right hand column at top: Make sure you know how to find the balance on your GDC.
In chapter	309	7F	Extra line added at top of exercise (before Q1) to say: In the following questions, assume all payments are made at the end of each period.
In chapter	309	7F, 2	corrected quarterly to monthly
In chapter	309	7F, 3	where she will have to deposit TRY1000 at the start of each month'
In chapter	309	7F, 3b	Amended Q to: Explain why the investment fund will never run out of money. Add to the beginning 'In an exponential function ...' Add: b not equal to 1 to the end of the second line Change the word 'power' for 'number'
In chapter	311	Key point (red box at the bottom of the page)	Bottom red box: delete from second line: as x ...
In chapter	311	Key point (red box at the bottom of the page)	Bottom red box: replace 'exponential decay' with:
In chapter	311	Key point (red box at the bottom of the page)	and is increasing for $0 < a < 1$
In chapter	312	Key point (red box at the bottom of the page)	Yannis; 19th century
In chapter	312	Key point (red box at the bottom of the page)	diethyl
In chapter	313	7G, 3	Insert: where S is the sharpness and t is the time in hours.
In chapter	313	7G, 4	T intercept
In chapter	315	7H, 3a	T intercept
In chapter	315	7H, 3b	$5000e^{0.0372 \times 8.5}$ (8.5 rather than 8)
In chapter	316	Example 13	VJ
In chapter	316	Example 14	views (not sales)
In chapter	317	Example 14	ab^x
In chapter	317	7I, 2	amended to make clear that the $-t/3$ is in the exponent
In chapter	318	7I, 4	A small tank

In chapter	318	7I, 4b	Changed seconds to minutes
In chapter	318	7I, 5	Data in table adjusted to give an exponential model
In chapter	318	7I, 5e	Part 'e' deleted and part (f) becomes new part €
In chapter	318	7I, 6	ever (not even)
In chapter	319	7I, 7	duplicate question, removed
In chapter	319	7I, 8	duplicate question, removed
In chapter	319	7I, 9	renumbered to become Q7
In chapter	319	7I, 9	kt
In chapter	319	7I, 9c	exact' deleted
In chapter	320	Key point (red box at the bottom of the page)	logarithmic expression (not function)
In chapter	320	Last line on the page	log and ln (not in capitals)
In chapter	321	Example 15	Deleted: 'or by using the result above'
In chapter	322	Investigation 13	ln
In chapter	323	7J	Duplicate TOK box deleted
In chapter	323	Investigation 14	$(gof)(x)$
In chapter	325	Investigation 15	this set of data
In chapter	327	7L, 2a	relationship
In chapter	328	7L, 3	q and t ; $t=ae^{bq}$ (reversed)
In chapter	328	7L, 3a	t (instead of q)
In chapter	328	7L, 3b	q and t reversed
In chapter	328	7L, 3c	Use the linear regression function on your GDC
In chapter	328	7L, 4b	Determine
In chapter	328	7L, 4c	Plot the data points
In chapter	328	7L, 4c	Using linear regression
In chapter	328	7L, 5b	Plot the data points
In chapter	329	7.5 Logistic models (above key point box)	Logistic functions have horizontal asymptotes at $f(x) = L$ and $f(x)=0$
In chapter	330	Hint	function within the domain
In chapter	330	7M, 3	$t=0$ (not x)
In chapter	330	7M, 3b	$P(t)$
In chapter	331	Chapter summary	for' deleted; give your answer to 2.s.f.
In chapter	333	Chapter review, 8	logarithmic expression (not function)
In chapter	333	Chapter review, 9	The annuity is for five years at 4% per annum compounded monthly and is to be paid out at the end of each month. interest per annum compounded monthly
In chapter	333	Chapter Review, 14	... given the payments are made at the end of each month
In chapter	334	Exam-style questions, 17	$t > 1$
In chapter	335	Exam-style questions, 24b	$0.1e^{-0.4t}$
In chapter	335	Exam-style questions, 25	[That is. t is in the superscript.]
Answers	797	Skills check 1c	December of the final year
Answers	797	Skills check 1e	as much interest
Answers	797	Skills check 3a	$1/\sqrt{x^3}$ or $x^{-3/2}$
			or $x^{5/2}$
			Format as table, as in worked solutions

Answers	797	Skills check 3b	-35
Answers	797	Skills check 4a	120
Answers	797	7A, 1b	234375
Answers	797	7A, 1c	$=9\sqrt{6}$ or 22.0
Answers	797	7A, 2a	$3 \times 2^{n-1}$
Answers	797	7A, 2c	deleted '1x'
Answers	797	7A, 2d	added parentheses
Answers	797	7A, 2e	delete 'r=3'
			-3^{n-1}
Answers	797	7A, 2f	$r=3, u_n=1.5(3)^{(n-1)}$
Answers	797	7A, 3a	$u_2/u_1=u_3/u_2=5$
Answers	797	7A, 3c	3.73×10^{20}
Answers	797	7B, 1A	230000
Answers	797	7B, 5b	0.927
Answers	797	7B, 6a	7 times
Answers	797	7B, 6b	6 times
Answers	797	7B, 6c	8 times
Answers	797	7B, 7a	9.13
Answers	797	7B, 7b	6.83
Answers	797	7B, 7c	11.2
Answers	797	7B, 7d	During 2059
Answers	797	7B, 7e	0.37%
Answers	797	7C, 2a	19.3
Answers	797	7C, 2b	92.6
Answers	797	7C, 2c	263
Answers	797	7C, 2d	23
Answers	797	7C, 3c	94%
Answers	797	7C, 3d	2018
Answers	797	7C, 3e	Soon, almost everyone in the world will have an email address and the number of new email users will not grow as fast.
Answers	797	7C, 5c	3.56
Answers	797	7C, 6b	30.2
Answers	798	7D, 3a	$r=5/6$
Answers	798	7D, 3d	$= r^2$
Answers	798	7D, 3e	replace with: ∞
Answers	798	7D, 3f	The series of squared terms is much less than the squared series of original terms.
Answers	798	7D, 4c	0.84375
Answers	798	7D, 5a	cm^2
Answers	798	7D, 5b	cm^2
Answers	798	7D, 5c	cm^2
Answers	798	7D, 5d	cm^2
Answers	798	7D, 5e	cm^2
Answers	798	7D, 5g	cm^2
Answers	798	7E, 2a	68512.05 ILS
Answers	798	7E, 2b	22
Answers	798	7E, 2c	3.53
Answers	798	7F, 1b	5742.63
Answers	798	7F, 2a	667.97
Answers	798	7F, 2b	21869.79

Answers	798	7F, 3a	957366.57
Answers	798	7F, 3b	Interest per month from the fund is $6340.17 > 1200$ so the money will never run out. 178.13
Answers	798	7F, 4a	2078.61
Answers	798	7F, 4b	(0, -2)
Answers	798	7G, 1bi	(0, -1.8) [amended from (0,0)]
Answers	798	7H, 1	final row of column 4 should read 'growth'
Answers	798	7H, 1	reversed brackets in final column of table
Answers	798	7H, 1	Replaced graph with the graph in the worked solutions
Answers	798	7H, 2c	The y -intercept is the temperature of the water when it is initially poured into the cup.
Answers	799	7H, 3b	
Answers	799	7H, 3d	The temperature decays over time as the water cools.
Answers	799	7H, 3f	The horizontal asymptote represents room temperature. After a long time has passed, the water will be in equilibrium with the room.
Answers	799	7H, 3g	The upper bound is the temperature of the water when it was initially poured into the cup and the lower bound is the equilibrium temperature after a long time.
Answers	799	7I, 2b	414
Answers	799	7I, 2c	2.08 hours
Answers	799	7I, 2d	6.91 hours
Answers	799	7I, 3c	Domain: $x > -3$, Range: $y \in \mathbb{R}$
Answers	799	7I, 4b	0.1
Answers	799	7I, 5a	Graph replaced with graph from worked solutions
Answers	799	7I, 5a	Joroslav feels these prices are growing exponentially from a base level of 7 million CZK.
Answers	799	7I, 5b	Plot the value of the houses above 7 million (v) against the the month in which the data was collected (t)
Answers	799	7I, 5c	It's an increasing set of points with increasing differences, possibly approaching an asymptote at $v=0$ Replaced with equation from worked solutions $v = 0.150(1.10)^t$
Answers	799	7I, 5d	0.985
Answers	799	7I, 5e	deleted graph; 28 months
Answers	799	7I, 6a	Replaced graph with the graph in the worked solutions
Answers	799	7I, 6b	HPC and the rate of change are constantly increasing.
Answers	799	7I, 6c	From the GDC $HPC(t) = 1.65 \times (1.69)^x$
Answers	799	7I, 6d	0.945
Answers	799	7I, 6e	Graph replaced with graph from worked solutions

Answers	799	7I, 6f	Every 7 days.
Answers	799	7I, 7	duplicate question, removed
Answers	799	7I, 8	duplicate question, removed
Answers	799	7I, 9	renumbered to become Q7
Answers	799	7I, 9d	$t = 10$ days
Answers	800	7K, 4b	Intersection with y -axis at $(0, \ln(2))$ Intersection with x -axis at $(-1, 0)$
Answers	800	7K, 4c	Changed to graph in worked solutions
Answers	800	7K, 4d	Added graph from worked solutions $f^{-1}(x) = e^x - 2$
Answers	800	7K, 5b	Intersection with y -axis at $(0, \log(3))$ Intersection with x -axis at $(-2, 0)$
Answers	800	7K, 5c	Domain: $x > -3$
Answers	800	7K, 6a	Graph replaced with graph from worked solutions Intersection with y -axis at $(0, -4)$ Intersection with x -axis at $(\ln(3), 0)$
Answers	800	7K, 6b	\ln <instead of \log >
Answers	800	7K, 6c	Domain = $x > -6$
Answers	800	7L, 1a	$B = 1585$; $G = 3981072$; G is 2512 times greater than B
Answers	800	7L, 1b	50.12 (replaces 50.11)
Answers	800	7L, 1c	Using a log scale reduces the range and spreads the data points move evenly.
Answers	800	7L, 2	Changed column headings to ' $\log(\text{GNI})$ ' and ' $\log(\text{LE})$ '
Answers	800	7L, 2b	$\log(y) = 0.0795$
Answers	800	7L, 2c	$a = 34.87$; $b = 0.0795$
Answers	800	7L, 2d	The power model gives the same values, with any differences due to rounding during the process.
Answers	800	7L, 3a	$\text{Int} = \{0.875, 1.03, 1.22, 1.39, 1.63\}$
Answers	800	7L, 3b	Replaced with graph in the worked solutions
Answers	800	7L, 3c	From the linear regression function on the GDC $\ln a = 0.744$ and $b = 0.0167$
Answers	800	7L, 3d	$\ln a = 0.744$ $\rightarrow a = e^{0.744} = 0.0167$
Answers	800	7L, 3e	5.74 minutes
Answers	800	7L, 4a	\$ inserted
Answers	800	7L, 4b	s made lower case
Answers	800	7L, 4c	Changes to graph; graph to only have data points
Answers	800	7L, 4e	$S(n) = 54.0$
Answers	800	7L, 4f	6802
Answers	801	7L, 4g	The data only go up to 200 shirts; therefore, this is extrapolation far beyond the original data.
Answers	801	7L, 4hii	This gives the same values for a and b . Any differences are due to rounding during the calculations.
Answers	801	7L, 5a	Replaced with graph in worked solutions

Answers	801	7L, 5b	Extra steps of calculation removed
Answers	801	7M, 1b	$9.09 < P(t) < 100$ According to the model the number of people with broadband will approach 100%
Answers	801	7M, 1d	99.95
Answers	801	7M, 3a	$k = 0.347$
Answers	801	7M, 3b	40000
Answers	801	7M, 3c	33.4
Answers	801	Chapter review 3b	300000
Answers	801	Chapter review 3c	643 077
Answers	801	Chapter review 5a	£9,610.20
Answers	801	Chapter review 5b	£9,719.76
Answers	801	Chapter review 6b	21.8 years
Answers	801	Chapter review 10b	6.12 years
Answers	801	Chapter review 14a	1.12m
Answers	801	Chapter review 14b	29 weeks
Answers	801	Chapter review 15a	$10(2^{n-1})$
Answers	801	Chapter review 15b	$10(4^{n-1})$
Answers	801	Chapter review 16	\$11238
Answers	801	Exam-style questions, 201i	years
Answers	801	Exam-style questions, 201ii	years
Answers	801	Exam-style questions, 20b	years
Answers	801	Exam-style questions, 22b	$Vn = (n-1) \cdot \log(r) + \log(a)$
Answers	801	Exam-style questions, 23c	No, as this would mean $r = -2$

Chapter 8

Section	Page	Exercise / question	Correction
In chapter	347	8B, 8	corrected to < in stem
In chapter	348	Investigation 3	phrase shift' made bold 'to the right and similarly for the cosine curve' added
In chapter	350	8C, 1d	numbering corrected (from (b))
In chapter	350	8C, 3c	to the left
In chapter	352	8C, 7	$a \sin(b t - c) + d$. (+ amended to -)
In chapter	352	8C, 7e	07.52 (not 07.24) 20.08 (not 19.49) Use your model from part c
In chapter	356	8D, 1b	$x^2 - 4x - 5 = 0$ (+ changed to minus sign)
In chapter	359	Example 8	graph y axis becomes Im; x axis becomes Re
In chapter	360	Red box	Added subheading:
In chapter	362	Example 9	The exponential form of a complex number graph y axis becomes Im; x axis becomes Re
In chapter	363	8F, 2	$z = \sqrt{3} + i$

In chapter	363	8F, 6a	t>0 added into stem 'For some angle theta' added into stem graph y axis becomes Im; x axis becomes Re
In chapter	366	8G, 1	'Two AC electrical sources each output a maximum of 110V and have a phase difference of 60°. Find the maximum voltage of the combined output.'
In chapter	366	8G, 5	It is given that ...
In chapter	366	8G, 5a	can be modelled by the function daylight (rather than day)
In chapter	366	8G, 5b	$h(t)=4.32\sin(0.0165t-1.28)+12.03$ Hence find an expression for the length of daylight on day t and ...
In chapter	368	Chapter review, 4	Write $\sqrt{3}+1$ in modulus argument form and hence calculate...
In chapter	368	Chapter review, 6	graph y axis becomes Im; x axis becomes Re
In chapter	368	Chapter review, 9	cos changed to sin
In chapter	368	Chapter review, 10	26.5 A, 17.3 A
In chapter	369	Exam-style questions, 11	Changes to the diagram.
In chapter	369	Exam-style questions, 12	deleted superscript 'c' and brackets but add 'radians' after 6/5
In chapter	369	Exam-style questions, 13	changes to diagram to indicate the minimum and maximum points
Answers	802	Skills check, 1	Graph replaced with the graph in the worked solutions
Answers	802	8A, 3a	14.7
Answers	802	8A, 3b	51.3
Answers	802	8A, 4b	26.8m
Answers	802	8A, 5b	6.51 m
Answers	802	8A, 6a	11.1cm
Answers	802	8A, 6b	6.88
Answers	802	8A, 7	9.41
Answers	802	8B, 2aii	377.5
Answers	802	8B, 2bii	1.67, 4.61 , 7.95
Answers	802	8B, 3aii	(0.95, 0.81)
Answers	802	8B, 3b	In both cases the fact that the range of $y = \sin x$ is $-1 \leq y \leq 1$ means there can be no other solutions
Answers	802	8B, 4a	Because the points representing 'theta' and 180- 'theta' have the same y-coordinate on the unit circle they have the same value of sine.
Answers	802	8B, 4ci	Replaced BCA with 20
Answers	802	8B, 5	10.4cm and 2.31 cm
Answers	802	8B, 8c	deleted 'cannot both be 0'
Answers	802	8C, 1	Added in answers to part 1a
Answers	802	8C, 1a	Numbering corrected to 1b
Answers	802	8C, 1a iv	1 to the left <now part b>
Answers	802	8C, 1b	Numbering corrected to 1c
Answers	802	8C, 1c	Numbering corrected to 1d

Answers	802	8C, 1c iv	2 to the right <now part d>
Answers	802	8C, 3c	1/4
Answers	802	8C, 4a	Dates are not real numbers, whereas the day numbers are.
Answers	802	8C, 4b	Number of hours plus number of minutes divided by 60.
Answers	802	8C, 4e	The times of sunrise for each date in subsequent years are nearly the same, so whilst this is extrapolation, it will be reliable for future dates.
Answers	802	8C, 5a	$1000\pi = 3142$
Answers	802	8C, 5b	$S = 4 \sin(1000\pi(t - 0.001))$
Answers	803	8C, 6a	Replaced with graph in worked solutions
Answers	803	8C, 6b	max=(0.00825,4.98) min=(0.02396,-4.98)
Answers	803	8C, 6ci	4.98
Answers	803	8C, 6d	4.98sin
Answers	803	8C, 7b	text deleted; 15.15 replaces 15-15
Answers	803	8C, 7c	-0.035; added: $h(t) = 1.65 \sin(0.512(t + 0.035)) + 2.45$
Answers	803	8C, 7e	1.12m
Answers	803	8D, 1b	5 or -1
Answers	803	8E, 1a	Replaced with answer in worked solutions
Answers	803	8E, 1b	Replaced with answer in worked solutions
Answers	803	8E, 1c	Replaced with answer in worked solutions
Answers	803	8E, 1d	Replaced with answer in worked solutions
Answers	803	8E, 2b	1.19 (replaces 0.38)
Answers	803	8E, 2d	-2.68 (replaces 0.464)
Answers	803	8E, 2e	2.76 (replaces -1.19)
Answers	803	8E, 3d	$2\cos(-5\pi/6)$
Answers	803	8E, 4a	2.60 (instead of 2.59)
Answers	803	8E, 4c	-1.73
Answers	803	8E, 4f	2.15i (rather than 2.14i)
Answers	803	8F, 1a	3π <replaces second π >
Answers	803	8F, 2	$n = kn$ where k 'is a member of' \mathbb{Z}
Answers	803	8F 3a and 3b	Answers transposed
Answers	803	8F, 3c	Graph replaced with the graph in the worked solutions
Answers	803	8F, 4	Last line of proof added
Answers	803	8F, 6c	$z_1 = 0 + 0.5i$ $z_R = 1 + 0i$
Answers	803	8F, 6d	1+ deleted; 3+ replaced with 4+
Answers	803	8F, 6e	2 (not 1) in both instances; worked solution answer added
Answers	804	8G, 1	Changed to method used in worked solutions
Answers	804	8G, 2c	Replaced with answer in worked solutions
Answers	804	8G, 3	15.1
Answers	804	8G, 4	$r=3.61$, $\alpha=88.9^\circ$
Answers	804	8G, 5a	Amended to worked solutions answer ... $=4.32\sin(0.0165t - 1.28) + 12.03$
Answers	804	Chapter review, 2a	0.866
Answers	804	Chapter review, 2b	2.65

Answers	804	Chapter review, 4	$-\pi/3$
Answers	804	Chapter review, 5b	$1/\sqrt{2}$
Answers	804	Chapter review, 8	$ z_1 =2\sqrt{2}, \arg(z_1) = \pi/6$
			$ z_2 =\sqrt{2}, \arg(z_2) = -\pi/3$
Answers	804	Chapter review, 9	4.84
Answers	804	Exam-style questions, 13	Replaced with graph in worked solutions
Answers	804	Exam-style questions, 15a	$0 + 12i$
Answers	804	Exam-style questions, 15b	$0+$

Chapter 9

Section	Page	Exercise / question	Correction
In chapter	373	Skills check, 2	replace 'each' with 'the', replace '2' with '1'
In chapter	383	9C, 3	using the given matrices U and R.
In chapter	383	9C, 4	Verify your answer using the given matrices T and X
In chapter	386	Exam Hint box	on your GDC
In chapter	390	9D, 7	Page 388
In chapter	396	9E, 3b	delete 'equation', and replaced 'to find' with 'which would find'
In chapter	396	9E, 3d	What single transformation ...'
In chapter	397	9E, 9	-1 changed to -2
In chapter	397	9E, 10	(2, 1) to (1, 4) changed to (1, 2) to (-1, -1)
In chapter	400	9F, 1	X'
In chapter	400	9F, 3a	... is now rotated through 180° about the origin
In chapter	400	9F, 4b	...
In chapter	401	9F, 5cii	Find a single matrix
In chapter	406	9G, 4	$T_5 <5 \text{ subscript}>$
			Added: The three possible states of the two boxes are shown below.
			Amends made to diagram - pink circles corrected to blue, and pairs made more obvious
In chapter	406	9G, 4b	3W-3B
			State the new number of states and construct the transition matrix ...
In chapter	412	9H, 4	... from one state to another after a period of a month, with the first row/column representing state A, the second state B and so on.
In chapter	412	9H, 4b	Deleted 'C'
In chapter	420	9J, 3c	result from part a
In chapter	420	9J, 4d	Replaced with answer in worked solutions
In chapter	422	Chapter review, 5	S (instead of T)
In chapter	422	Chapter review, 6b	with image (replaced 'who image is')
In chapter	422	Chapter review, 7	... and (8,0) in T_0 is transformed to (0,2) in T_2
In chapter	422	Chapter review, 7ii	determine exact deleted
Answers	804	Skills check, 1	subscript 3,1 (not 1,3)

Andwers	804	9A, 2c	Changed for round brackets
Andwers	805	9A, 3a	Changed for round brackets
Andwers	805	9A, 3b	Changed for round brackets
Andwers	805	9A, 4c	Changed for round brackets
Andwers	805	9A, 4a	1813.13 replaced 1813.12; Changed for round brackets
Andwers	805	9A, 5ai	Changed for round brackets
Andwers	805	9A, 6	Changed for round brackets
Andwers	805	9C, 1d	$(-1/4 -4/3)$
Andwers	805	9C, 3	Changed for round brackets
Andwers	806	9C, 4	deleted first part of answer and added numerical verification from worked solutions
Andwers	806	9C, 8a	T changed to B ; -21 changed to -31 in final bracket
Andwers	806	9D, 3a	$x = -12, y = 30, z = 4$
Andwers	806	9D, 3b	20 replaced with 200; 16 replaced with 124
Andwers	806	9D, 3c	$x = 200/11, y = 124/11$
Andwers	806	9D, 4	$a = -0.36, b = -1.35, c = -3.59, d = -0.88$
Andwers	806	9D, 4	$F_1 = 30,625$ euros, $F_2 = 61,250$ euros, $F_3 = 83,125$ euros (new question 4 answer added in)
Andwers	806	9D, 5	Amounts of each product A,B,C,D are 36, 48, 60, 20 (current table in Q 5 deleted)
Andwers	806	9E, 3b	T^T ; 1 corrected to -1
Andwers	807	9E, 5b	Since $8 \times 45^\circ = 360^\circ$, R^8 , corresponds to rotation by 360 degrees, i.e. the object
Andwers	808	9E, 9a	(14, -11)
Andwers	808	9E, 9b	changed to (0, -6)
Andwers	808	9E, 9e	Part 9e deleted
Andwers	808	9F, 2a	18 (instead of 12)
Andwers	808	9F, 3a	lower case 'b'
Andwers	808	9F, 4b	$A =$ (added); $b = (0 \ 0)$
Andwers	808	9F, 4c	changed to numerical answer given in the worked solutions
Andwers	808	9F, 5b	Because any more triangles formed lie inside the perimeter. 7.8125.
Andwers	808	9F, 5ciii	2.31
Andwers	808	9F, 5d	Replaced with numerical solutions in worked answers
Andwers	808	9F, 5e	Replaced with numerical solutions in worked answers
Andwers	808	9F, 5f	0.00391 0.00781 0.00677
Andwers	808	9G, 2b	Probability that a person who buys Popsi now will change to Ceko 3 weeks from now is 0.37.
Andwers	809	9G, 4c	The particular results obtained from the investigation should match the general formulae given below.

Andwers	809	9G, 5c	1361 votes
Andwers	809	9H, 3b	57.90%
Andwers	809	9H, 3c	Added matrices from worked solutions
Andwers	809	9H, 4a	Replaced with answer in worked solutions
Andwers	810	9I, 4b	Deleted additional working
Andwers	810	9J, 4b	Bold removed
Andwers	810	9J, 4e	$R_n = 2900p^n + 3600$
Andwers	810	9J, 4f	3620
Andwers	810	Chapter review, 1b	Undefined
Andwers	810	Chapter review, 1f	17 deleted and replaced with -7
Andwers	810	Chapter review, 4a	$x=30/13$, $y=-20/13$
Andwers	810	Chapter review, 4b	$w=y=0$, $z=-1.5$
Andwers	810	Chapter review, 4c	$ A = 0$ because equations represent the same line. Therefore, there is no solution
Andwers	811	Chapter review, 5	S (instead of T)
Andwers	811	Chapter review, 6c	the top line amended to: -a-1. (with no gaps) second line $7a+2$ with no gaps
Andwers	811	Chapter review, 7bii	0.625 amended to $1/16$ (in two instances)
Andwers	811	Chapter review, 7biii	21.3
Andwers	811	Chapter review, 11c	580 (replaces 1000A)

Chapter 10

Section	Page	Exercise / question	Correction
In chapter	439	10D, 4	The word 'extra' added in before 'number' and 'parts'
In chapter	441	10E, 2	Q changed to read: 'a cylinder open at one end'
In chapter	441	10E, 7	...with equation $x^2+y^2=36$ added after 'radius 6'
In chapter	444	10F, 1ii	du changed to dx
In chapter	453	Example 17, part b	$=4e^{4x}$ (corrected from e to 4e)
In chapter	461	10K, 5	The distance (s) fallen by the marble in metres ('in metres' added)
In chapter	462	10K, 6	x changed to s in the stem of the Q The distance cycled along the road ('along the road' added)
In chapter	467	Chapter review, 4	Changed increasing to decreasing
In chapter	467	Chapter review, 5	re-numbered 5a-5d
In chapter	467	Chapter review, 7d	Changed to: [0,4[,]4,6[,]6,7[,]7,8.5[and]8.5, 10[
In chapter	468	Exam-style questions, 11a	Corrected letter spacing
Answers	811	Skills check, 1	5' deleted from the end
Answers	811	Skills check, 3	(1,12) deleted
Answers	811	10B, 1a	$dy/dx=0$, 0
Answers	811	10B, 1b	$dy/dx=4$, 8
Answers	811	10B, 1c	$f'(x)=6x$, 12

Answers	811	10B, 1d	$f'(x)=10x-3$, 17
Answers	811	10B, 1e	$f'(x)=12x^3+7$, 103
Answers	811	10B, 1f	$f'(x)=20x^3-6x+2$, 150
Answers	811	10B, 2a	$f'(x)=\frac{1}{3}x^{-2/3}$, $\frac{1}{3}$
Answers	811	10B, 2b	$dy/dx=x^{-1/2}$, 1
Answers	811	10B, 2c	$dy/dx=4x+3/x^2$, 7
Answers	811	10B, 2d	$dy/dx=-18x^{-4}+4$, -14
Answers	811	10B, 2e	$dy/dx=-21x^{-4}+32x^3-12x$, -1
Answers	812	10B, 6a	-0.112c
Answers	812	10B, 6b	3.36 (replaced 3.56); -1.12 (replaced 0.52)
Answers	812	10B, 7c	-5
Answers	812	10B, 7d	Explanation replaced with: 'so the model suggests that the bungee jumper returns to his starting point, which in practice does not occur. (-1, -2) and (1/3, 0.815)
Answers	812	10B, 8	Tangent: $y=26x - 45$
Answers	812	10C, 4a	Normal: $y = -1/26. x + 92/13$
Answers	812	10C, 4b	Tangent: $y = x + 9$
Answers	812	10C, 5	Normal: $w = -x + 27$
Answers	812	10D, 2a	$y = -1/4. x + 9/2$ and $y = 1/4 x + 9/2$ meet at (0, 4.5)
Answers	812	10D, 2b	Maximum at (-0.786, 13.626) and minimum at (2.120, -23.182)
Answers	812	10D, 4ai	Maximum at (0, -1) and minimum at (2, 3)
Answers	812	10D, 4aii	€55000 for 0 parts
Answers	812	10D, 4aiii	€51 667 for 5000 parts
Answers	812	10D, 4b	€46 667 for 4000 parts
Answers	812	10D, 5	Strategy i
Answers	812	10E, 1b	462 m
Answers	812	10E, 3	Bold removed
Answers	812	10E, 4b	16.287 (rather than 16.3)
Answers	812	10E, 5c	units added (cm)
Answers	813	10E, 7b	3.62 cm
Answers	813	10E, 8b	Answer deleted and replaced with: dimensions are 8.48 cm by 8.48 cm and the area is 72cm^2 Answer deleted and replaced with: $A=402\text{cm}^2$, $r=5.66\text{cm}$ and $h=11.3\text{ cm}$
Answers	813	10F, 1ai	$y = < y \text{ added}>$
Answers	813	10F 1aii	$dy/dx = 6x(x^2+4)^2$
Answers	813	10F 1bii	$dy/dx = 10(5x-7)$
Answers	813	10F 1cii	$dy/dx=8(3x^2 - 6x)(x^3 - 3x^2)^3$
Answers	813	10F 1dii	$dy/dx = 2/(4x - 5)^{1/2}$
Answers	813	10F 1eii	$dy/dx= - 4x/(x^2+1)^3$
Answers	813	10F 1fii	$dy/dx = - 5/(5x - 2)^{-3/2}$
Answers	813	10F, 2c	h'
Answers	813	10F, 3a	x amended to 4 on top line of equation 5 (not 1)
Answers	813	10G, 1b	deleted: (this has imaginary roots)
Answers	813	10G, 1e	$4(x^3-1)/x^2$

Answers	813	10G, 1f	$2(2t + 1)^3(t^3 + 1)(10t^3 + 3t^2 + 4)$
Answers	813	10G, 2a	$(4x^3-4)/x^2$
Answers	813	10G, 2b	$(x^2-2x-1)/(x^2+1)^2$
Answers	813	10G, 2c	$2(x+1)^{3/2}$
Answers	813	10G, 3f	$(2t-3)^2$ (replaced $2t - 3$)
Answers	813	10H, 2b	$\cos^2(x)-\sin^2(x)$
Answers	813	10H, 2f	Replaced with answer in worked solutions
Answers	813	10H, 3b	minus sign added
Answers	813	10H, 3f	$8(\cos^2(4t)-\sin^2(4t))$
Answers	813	10H, 3g	$6\sin 3x \cos 3x$
Answers	813	10H, 3h	$-\sin^3(t)+2\sin t \cos^2(t)$
Answers	814	10I, 1e	$4e^{(2x)}(x+1)$
Answers	814	10I, 1g	added: $+ 3 \ln(t^2 - 2)$
Answers	814	10I, 4a	added parentheses around $\ln x$
Answers	814	10I, 4bii	replaced π with 3.14
Answers	814	10I, 4cii	replaced $\pi/3$ with 1.05
Answers	814	10I, 5b	$x = -2.5$
Answers	814	10J, 2a	replaced with
Answers	814	10J, 2b	Maximum (0.5). minimum (1.06, 2.97)
Answers	814	10J, 2c	Replaced with: (0.669, 3.79)
Answers	814	10J, 3a	replaced with $x > 0.669$ Added parts (i) and (ii) i. $e^x(x-1)/x^2$
Answers	814	10J, 3c	ii. $e^x(x^2-2x+2)/x^3$ replaced expression with $e^x(x^2-2x+2)/x^3=0$ (as in worked solutions)
Answers	814	10J, 4b	$f''(x)=6/(x-3)^3$ 'does not equal' 0, hence no point of inflection
Answers	814	10J, 5ai	Replaced with: minimum at (-0.25, -8.54)
Answers	814	10J, 5aai	$6(x-2)(2x-1)$
Answers	814	10J, 5aiii	replaced with
Answers	814	10J, 5aiv	(2.0), (0.5, -5.06) replaced with
Answers	814	10J, 5bi	Concave up when $x < 0.5$, $x > 2$ Concave down when $0.5 < x < 2$ replaced with
Answers	814	10J, 5bii	minimum (2.36, -0.067)
Answers	814	10J, 5biii	maximum (5.50, 0.00290)
Answers	814	10J, 5biv	$2e^{(-x)}\sin x$ replaced with
Answers	814	10J, 5biv	(0.1), (3.14, -0.0432), (6.28, 0.00187)
Answers	814	10J, 5ci	$0 < x < \pi$ (replaced x with (0, π))
Answers	814	10J, 5cii	$\pi < x < 2\pi$ maximum (1.5, 0.168)
Answers	814	10J, 5cii	$2xe^{-2x}(2x^2 - 6x + 3)$

Answers	814	10J, 5ciii	(0,0), (0.634, 0.0717), (2.37, 0.117)
Answers	814	10J, 5civ	concave down when $x < 0$, $0.634 < x < 2.37$ concave up when $0 < x < 0.634$, $x > 2.37$ \approx replaced 'or'
Answers	814	10J6bii	
Answers	814	10K, 1a	2m/s
Answers	814	10K, 1b	4m/s
Answers	814	10K, 2a	1m/s
Answers	814	10K, 2b	11m/s 14m/s ²
Answers	815	10K, 2d	s added
Answers	815	10K, 2e	s added
Answers	815	10K, 3	-20.1
Answers	815	10K, 4bi	m/s added
Answers	815	10K, 4bii	space inserted between number and unit
Answers	815	10K, 4biii	m/s added
Answers	815	10K, 5ai	m added
Answers	815	10K, 5aii	s added
Answers	815	10K, 5b	t made superscript
Answers	815	10K, 5c	m/s added
Answers	815	10K, 5d	m/s added
Answers	815	10K, 5e	s added
Answers	815	10K, 6a	s added
Answers	815	10K, 6d	v' 'for all t ' deleted s added
Answers	815	10K, 7b	$t = 0.785s$
Answers	815	10K, 7di	cm/s added
Answers	815	10K, 7dii	answer deleted
Answers	815	10K, 8	0.08 cm min^{-1}
Answers	815	10L, 4	< 0 added minus symbol added in front of $2e^{2x}$ Additional text deleted
Answers	815	Chapter review, 4	re-numbered 5a-5d
Answers	815	Chapter review, 5	$2x(64 - x)$
Answers	815	Chapter review, 6a	m added
Answers	815	Chapter review, 6b	2048
Answers	815	Chapter review, 6c	\leq replaced $<$
Answers	815	Chapter review, 7bi	The particle is moving right when $v > 0$ and left when $v < 0$. 'It depends on the sign of v' ' deleted
Answers	815	Chapter review, 7bii	Q number placement changed
Answers	815	Chapter review, 7d	$7/(4\sqrt{3}) \text{ cm/min}$
Answers	815	Chapter review, 9	and $(5/2, -35/24)$
Answers	815	Exam-style questions, 11a	word 'the' corrected.
Answers	815	Exam-style questions, 11b	The gradient is negative between $x = 0.314$ and $x = 3.19$ cm^3 added
Answers	816	Exam-style questions, 12d	
Answers	816	Exam-style questions, 13a	Top line of the equation modified to: $-2x(x^3 + 1)$
Answers	816	Exam-style questions, 13d	... this happens for $-1 < x < 0$

Answers	816	Exam-style questions, 14	cm/min added
Answers	816	Exam-style questions, 15a	m added
Answers	816	Exam-style questions, 15b	s added
Answers	816	Exam-style questions, 16c	$t = 0.756 \text{ s}$ $x = -0.191 \text{ m}$
Answers	816	Exam-style questions, 16d	$v = 2.56 \text{ m/s}$ $x = 0.641 \text{ m}$

Chapter 11

Section	Page	Exercise / question	Correction
In chapter	486	11D, 9	Position of image corrected
In chapter	502	11H, 4	B (5,0) C (2.5, 4)
In chapter	502	11H, 5	A1 <1 should be subscript> and A2 (2 should be subscript>
In chapter	502	11H, 5b	If amended to 'Given' more than amended to 'of' maximum possible integer ('possible' added) 'for this to occur' deleted
In chapter	507	11I, 5a	Changes to diagram: grid removed and x axis amended to make it more legible. Purple curve labelled 'f'
In chapter	508	11I, 8	Q renumbered into part (a) (b) and c
In chapter	510	11J, 1	in ms^{-2}
In chapter	514	11K, 6	x amended to t
In chapter	515	11K, 9b	increase amended to 'change in'
In chapter	515	11K, 9c	increase amended to 'annual change'
In chapter	516	Chapter 11, Example 23	all exponents amended to $2x^3$ not $2x^2$
In chapter	521	11M, 1	x and y values reversed in table
In chapter	521	11M, 4	size amended to volume
In chapter	526	Chapter review, 2c	added: in cm^3 at time t in months, Added: from the moment it starts to return home
In chapter	527	Chapter review, 8a	Added: in m^3
In chapter	527	Chapter review, 9	Added: in m
In chapter	527	Chapter review, 10	$g(x) = 17/16x^2$
Answers	816	11A, 2d	dx inserted
Answers	816	11B, 1bii	$1.450 < R < 2.283$
Answers	816	11B, 1fii	2.16
Answers	816	11B, 1fi	13.5
Answers	817	11B, 1i i	Limits amended to -3 and 5
Answers	817	11B, 1i ii	
Answers	817	11B, 2e	256/3
Answers	817	11B, 4	25.33
Answers	817	11C, 2cii	-0.817
Answers	817	11D, 4	1.227
Answers	817	11D, 5a	11.55
Answers	817	11D, 5a	5.198
Answers	817	11E, 1g	minus sign amended to plus sign
Answers	818	11E, 8e	x^3 amended to x^2

Answers	818	11E, 10	+c amended to: -259/15
Answers	818	11E, 11	+c amended to: -5/2
Answers	818	11F, 1b	- $\frac{1}{4}(4x - 1) + c$ <brackets added>
Answers	818	11F, 3	$y = \frac{1}{2}x^{-2} + \ln \dots$ - $\ln 2$ added to the end of the expression
Answers	818	11F, 7b	€9 324
Answers	818	11F, 7c	As n increases, the cost grows more and more slowly because $dC/dn \rightarrow 0$ as $n \rightarrow \infty$ <as symbol>.
Answers	818	11F, 8a	2/13 (replaced c)
Answers	818	11F, 9a	\leq replaced the second <
Answers	818	11F, 9c	$t = 5$ hours
Answers	818	11G, 4	Additional (not needed) part of answer deleted
Answers	818	11G, 5	27.3 cm ²
Answers	818	11H, 2	3.3
Answers	818	11H, 4c	69.0 (zero added)
Answers	819	11H, 5ai	Answer deleted; ii re-numbered as i
Answers	819	11H, 5aai	New answer: $A_2 = \frac{1}{2}(a+1)\ln(a+1) - a/2$
Answers	819	11H, 5b	7
Answers	819	11I, 5a	558 (replaced 279)
Answers	819	11I, 5bi	220
Answers	819	11I, 5bii	3606
Answers	819	11I, 6aiii	1.08
Answers	819	11I, 6biii	0.44
Answers	819	11I, 8a	90 degrees (replaced $\pi/2$)
Answers	819	11J, 2aii	s added
Answers	819	11J, 3a	cm/s ² added
Answers	819	11J, 3b	$0 < k \leq 1/8$.
Answers	819	11J, 4b	[Used s_{\max} instead of $s(t_0)$ because subscript 0 is used here for initial values.]
Answers	819	11K, 2b	Part b added in
Answers	820	11K, 3c	26.0km
Answers	820	11K, 4b	16.5 seconds
Answers	820	11K, 5a	-0.0154
Answers	820	11K, 8	0.194
Answers	820	11K, 9bi	-136 000
Answers	820	11K, 9bii	-57 300
Answers	820	11K, 9c	-96 700
Answers	820	11L, 1	y
Answers	820	11L, 4b	[not v^4]
Answers	820	11L, 6a	Replaced with answer in worked solutions
Answers	820	11L, 6c	Replaced with answer in worked solutions
Answers	820	11L, 7b	$y = x + 2\pi n$
Answers	820	11L, 8a	$dT/dt = -k(T - 24)$, $T(0) = 75$ degrees
Answers	820	11L, 9a	6.56×10^{15}
Answers	820	11L, 9a	punctuation added into the expression

Answers	821	11M, 1	x and y values reversed in table Table content changed as follows: 2, 5, 10 3, 6, 11 4 7 12 B
Answers	821	11M, 3bi	
Answers	821	11M, 4d	That a tumour has a maximum size is consistent with ...
Answers	821	11N, 4a	0.527
Answers	821	11N, 4b	0.535 (replaced 0.535); 1.5%
Answers	821	11N, 6c	40 meerkats (added)
Answers	821	11N, 6d	60 meerkats (added)
Answers	821	11N, 6e	40 more meerkats
Answers	821	11N, 6f	153 meerkats
Answers	821	Chapter review 1a	km/h added throughout 30<t<60 (replaced t E (30,60)) a (replaced v x 2) 60<t<75 (replaced t E (0, 30)) 75<t<90 (replaced t E 75, 90)
Answers	821	Chapter review 1e	1350km
Answers	821	Chapter review, 3	756 m
Answers	821	Chapter review, 5b	replaced exponent with -0.4558t
Answers	821	Chapter review, 6b	^2 deleted
Answers	821	Chapter review, 7a	3.60 (replaced 3.6)
Answers	821	Chapter review, 7b	0.10, 0.27 and 0.53
Answers	821	Chapter review, 8b	inserted minus sign
Answers	821	Chapter review, 9a	5.15m^2
Answers	821	Chapter review, 9b	164912 m^3
Answers	822	Chapter review, 13d	When approximating this area using the trapezium rule, a small area above the trapeziums and below the actual curve is not taken into account. Hence ...
Answers	822	Chapter review, 14	7.43
Answers	822	Chapter review, 15b	s' inserted
Answers	822	Chapter review, 15c	m/s added
Answers	822	Chapter review, 15d	s replaced d
Answers	822	Chapter review, 16b	$y=2e^{-1/2} e^{1/2x^2} = 1.21e^{1/2x^2}$

Chapter 12

Section	Page	Exercise / question	Correction
In chapter	541	12C, 2b	when $t=2s$
In chapter	544	12D, 6c	find the length of time ...
In chapter	553	12F, 5b	part a amended to 'question 2'
In chapter	561	12J, 1c	For the solutions in (i) part a and (ii) part b, draw a phase diagram
In chapter	561	12J, 2	d^2y amended to d^2x
In chapter	563	Chapter review, 2	d^2y amended to d^2x
In chapter	564	Chapter review, 6cii	$t=60s$
In chapter	564	Chapter review, 7a	in cm added

In chapter	564	Chapter review, 7b	in m added
In chapter	566	Chapter review, 14	deleted ' after x and y and amended to two dots above it (as in the Q directly below)
Answers	822	12A, 2b	-6 / 10.4 (numbers reversed)
Answers	822	12A, 3	99.5°
Answers	822	12A, 5d	2.92m s ⁻² forwards
Answers	822	12B, 1b	5.38
Answers	822	12C, 1c	126.9 degrees deleted
Answers	823	12C, 4b	$v = 3i + 12j$, <added>
Answers	823	12C, 6b	minus 8 amended to positive 8
Answers	823	12D, 1a	-9.81 (replaced 9.8)
Answers	823	12D, 1b	2 - 9.81t
Answers	823	12D, 1bii	4.905 (replaced 4.9)
Answers	823	12D, 3b	9.81
Answers	823	12D, 3c	0.749
Answers	823	12D, 3d	4.905 (replaced 4.9)
Answers	823	12D, 5a	Expression from answer book used
Answers	823	12D, 6a	43.3/25
Answers	823	12D, 6b	$43.3t + c_1 <1 \text{ subscript}> / 25t - 4.904t^2 + c_2 <2 \text{ subscript}>$
Answers	823	12D, 6c	2.83s
Answers	823	12F, 1	vectors put in bold
Answers	823	12F, 1aii	-2
			5
			corrected to :
			1
			n
Answers	824	12F, 3a	vectors put in bold
Answers	824	12F, 3b	-1/3 x replaced -3x
			Number for 3c added in
			vectors made bold
Answers	824	12F, 4a	vectors put in bold
Answers	824	12F, 4c	
Answers	824	12F, 5b	3.45t all in superscript
Answers	824	12F, 6bi	real' replaced with 'negative'
Answers	825	12G, 1aii	dy replaced with dt
			$dy/dt = 1, dy/dx = 1/2$
Answers	825	12G, 1bii	$dy/dt = 4, dy/dx = -4$
Answers	825	12G, 1ci	minus sign added before 0.2
Answers	825	12G, 1cii	$dy/dt = -1, dy/dx = 5$
Answers	825	12G, 1dii	$dy/dt = -5, dy/dx = -5$
Answers	825	12G, 1ei	3i
Answers	825	12G, 1eii	$dy/dt = 4, dy/dx = 4/3$
Answers	825	12H, 1	Tables amended to match worked solutions
Answers	826	12H, 1iv	0.50 (replaced 0.5004)
Answers	826	12H, 2	Tables amended to match worked solutions
Answers	827	12H, 3	Tables amended to match worked solutions
Answers	827	12I, 1b	Extra (not needed) parts of answer removed

Answers	827	12I, 1c	Extra (not needed) parts of answer removed
Answers	827	12I, 3a	Added: while the population of Y continues to climb.
Answers	827	12I, 3c	First part of answer amended to match worked solutions: When $x \rightarrow 0$, then $dx/dt \rightarrow 0$ and so $dy/dx \rightarrow \infty$, so the y -axis is an asymptote
Answers	827	12I, 3di	Extra (not needed) parts of answer removed
Answers	827	12I, 3dii	Extra (not needed) parts of answer removed
Answers	827	12J, 1ci	Extra explanation added above diagram
Answers	827	12J, 1cii	Extra explanation added above diagram
Answers	828	12J, 2b	6.77
Answers	828	12J, 2c	5.525s
Answers	828	12J, 2d	$x = 3t - 5/2$
Answers	828	Chapter review 2b	1.4s
Answers	828	Chapter review 2c	2.96 cm s^{-1}
Answers	828	Chapter review 4c	The solutions in part b are converging to the equilibrium point (2,2), or 20 lions and 2000 zebra. The population will eventually ...
Answers	828	Chapter review, 6ci	bottom entry in vector amended to: $1.3 t^2$
Answers	828	Chapter review, 7b	amended to answer in worked solutions
Answers	828	Chapter review, 7b	amended to answer in worked solutions
Answers	828	Chapter review, 12ai	subscripts corrected
Answers	828	Chapter review, 12bi	dot placement centred on x
Answers	828	Chapter review, 13ci	$\rightarrow \infty$ <added>
Answers	828	Chapter review, 14c	75 corrected to 40 in vecors (twice)
Answers	829	Chapter review, 16b	Table corrected to match worked solutions

Chapter 13

Section	Page	Exercise / question	Correction
In chapter	587	13B, 8	Q amended to: Johanna is designing a game which uses three five-sided spinners. Each spinner is numbered one to five, but she is not convinced that the spinners are all fair. In her game, the three spinners are spun and the number of "1"s that are scored is counted.
In chapter	592	13C, 4	27
In chapter	592	13C, 6	Amends to table: 'or more' deleted 'Number of hours' replaced with 'Frequency'
In chapter	592	13C, 6	Q amended to: Find the mean number of calls per 10 minute interval and investigate... 'with this mean' added to the end of the Q

In chapter	592	13C, 7	p'petri dish' replaced with 'two areas selected'
In chapter	596	Investigation 9	Added: or online software such as Geogebra or Desmos the mean changed to: μ standard deviation amended to: σ snowy corrected exactly' deleted 'and is not on time on the other two days' added
In chapter	600	13D, 7c	
In chapter	600	13D, 9ciii	
In chapter	604	13E, 8	Added: She calculates the variance for a single throw of a die is 11/16
In chapter	605	Chapter 13, Investigation 11	Added: In Excel, follow these steps to create... Added: If the Data analysis option is not
In chapter	613	13F, 1	per page' added
In chapter	616	Chapter review, 1	1.8 (replaced 1.4)
In chapter	616	Chapter review, 3b	Q amended to: Six random integers between 1 and 120 inclusive are generated.
In chapter	616	Chapter review, 3bi	are thrown' deleted
In chapter	616	Chapter review, 3bii	are thrown' deleted
In chapter	616	Chapter review, 3biii	are thrown' deleted
In chapter	616	Chapter review, 3biv	Q amended to: three consecutive factors of 120, and the other two numbers are not factors of 120
In chapter	617	Chapter review, 7	Added: There is no score for y values outside this range.
In chapter	618	Exam-style questions, 12b	Amended to: police officer
In chapter	619	Exam-style questions, 15	Part (a) marker deleted
In chapter	619	Exam-style questions, 16b	Write down' amended to 'find'
In chapter	619	Exam-style questions, 17a	fractions' amended to 'a fraction;
In chapter	619	Exam-style questions, 17b	part (i) marker deleted
In chapter	619	Exam-style questions, 17	renumbered as Q16
In chapter	619	Exam-style questions, 18	renumbered as Q17
In chapter	619	Exam-style questions, 18b	Part (ii) deleted
Answers	829	Skills check, 2	1.39
Answers	829	13A, 1	Deleted: None of the tables can represent a discrete probability because
Answers	829	13A, 1a	Not a discrete distribution as the sum of the probabilities is greater than 1
Answers	829	13A, 1b	Not a discrete distribution as 0.2 is not a probability
Answers	829	13A, 2e	0.38
Answers	829	13A, 3a	0.0001
Answers	830	13A, 8bi	Added in part (i)
Answers	830	13A, 8bii	Part c re-numbered as 8bii
Answers	830	13A, 8c	answer added in
Answers	830	13A, 9a	$= (1 - p)^y$
Answers	830	13A, 9b	trails corrected to trials

Answers	830	13B, 4a	0.00164
Answers	830	13C, 3	One is just below the mean and one just above
Answers	830	13C, 4	$S \sim \text{Po}(27.8)$. It is assumed that the seeds are distributed randomly throughout the 10 loaves.
Answers	830	13C, 8a	0.0505
Answers	830	13C, 9a	2.23
Answers	830	13D, 1d	0.82
Answers	830	13D, 1e	0.0014
Answers	830	13D, 1f	0.86
Answers	830	13D, 3	
Answers	831	13D, 7c	13 783
Answers	831	13D, 9a	Route A is on average shorter than route B, but has more variability, so the nurse will have to allow time for a longer journey. Route B takes on average longer but has less variability so the actual times are closer to the average.
Answers	831	13E, 3e	9.45
Answers	831	13E, 3f	7.08
Answers	831	13E, 4a	$a = 2.24$, $b = -3.87$
Answers	831	13E, 6	$b = -0.191$
Answers	831	13E, 7a	Corrected the second table row headers to read: h $P(H = h)$
Answers	831	13E, 8	Deleted: 'In the first game' and 'in the second game' $E(K) = 17/2$ $\text{Var}(K) = 11/8$ $E(L) = 17/2$ $\text{Var}(L) = 11/4$
Answers	831	13F, 1	0.728
Answers	831	13F, 2	0.0898
Answers	831	13F, 3	0.0137
Answers	831	13F, 6c	6.06
Answers	831	Chapter review, 1a	$p = 0.15$; $q = 0.05$
Answers	831	Chapter review, 3a	1, 2, 3, 4, 5, 6, 8, 10, 12, 15, 20, 24, 30, 40, 60, 120
Answers	831	Chapter review, 3bii	0.0346
Answers	831	Chapter review, 5d	0.758
Answers	831	Chapter review, 7	781
Answers	831	Chapter review, 9b	0.85
Answers	831	Exam-style questions, 10a	Part (a) marker deleted
Answers	831	Exam-style questions, 10b	Part (b) deleted
Answers	831	Exam-style questions, 11f	= amended to \neq
Answers	832	Exam-style questions, 12c	216
Answers	832	Exam-style questions, 13a	deleted
Answers	832	Exam-style questions, 13b	deleted

Answers	832	Exam-style questions, 14a	Renumbered as 13a Answer amended to: 0.8320
Answers	832	Exam-style questions, 14b	Renumbered as 13b Answer amended to: 0.134
Answers	832	Exam-style questions, 15a	renumbered as 14a
Answers	832	Exam-style questions, 15b	renumbered as 14b Answer amended to: 0.488
Answers	832	Exam-style questions, 16a	renumbered as 15
Answers	832	Exam-style questions, 16b	deleted

Chapter 14

Section	Page	Exercise / question	Correction
In chapter	633	14B, 4	Added: with a significance level of 5%
In chapter	635	14C, 4a	Added: at the 5% significance level
In chapter	638	14D, 3	Sales and temperature columns swapped positions
In chapter	646	14G, 2	Added: The population can be assumed to be normally distributed
In chapter	661	14K, 5f	The critical value is
In chapter	664	14L, 4	At an airport, there is one flight per day to Tokyo. The number of people joining a queue for the flight in the hour before it departs each day
In chapter	665	14L, 4bii	Explain' replaced 'Hence give two reasons ...'
In chapter	668	14M, 1b	Added: to the nearest whole number
In chapter	668	14M, 4a	Replaced with: Use the sample data to find estimates of the mean and standard deviation of the population.
In chapter	668	14M, 4b	Using the calculated values from part a, correct to 3 significant figures ...
In chapter	669	14M, 6	one week corrected to 5 days
In chapter	672	14N, 2	Added: one given a score out of 30 and the other an assessment of positive or negative,
In chapter	673	14N, 4B b	Amended to: find the probability that the survey will find that the proportion of households with children is between.

In chapter	674	14O, 2	<p>Rewritten as: An infection is spreading through a small hospital. It is known that under normal circumstances the average number of people a person will infect per day while he or she is infected is r.</p> <p>Over a period of two weeks the hospital authorities collect data for the number of new people infected each day in the hospital.</p> <p>A doctor wishes to test for rate of infection in the hospital to see if it is higher than the usual rate (r). To do this she takes as her null hypothesis that the data follows a Poisson distribution with mean r.</p>
In chapter	675	14O, 2a	Comment on whether or not a Poisson distribution is appropriate in this case.
In chapter	675	14O, 5	a POSITIVE correlation
In chapter	675	14P, 7	changed to: during various weekday evenings
In chapter	685	Chapter review, 6	z' deleted
In chapter	686	Exam-style questions, 10	'double-headed' amended to 'coin with two Heads'
In chapter	687	Exam-style questions, 13	Narcissus corrected
In chapter	687	Exam-style questions, 16	Pets changed to number of hours spent on social media
Answers	832	14A, 1a	Added: because the data is strictly increasing
Answers	832	14A, 1b	Added: because the data is strictly increasing other than the first two points which are non-decreasing
Answers	832	14A, 1c	Added: because the data is strictly decreasing
Answers	832	14A, 1d	Added: (approximately), because though there is a relation it is neither increasing or decreasing.
Answers	832	14A, 3c	Deleted 'From the scatter graph' onward
Answers	832	14A, 4b	Graph added Text below graph added: Graph indicates that the data does not follow a linear model throughout the whole range of scores. Those with a high score in Maths have very variable scores in English. This is possibly due to the Mathematics test not separating students at the higher ability level, or students who are able at Mathematics not having English as a mother tongue. A linear model is probably not appropriate over the whole range.
Answers	832	14A, 4c	0.8833 The Spearman's correlation coefficient is higher and indicates more strongly that those who do better in Maths do better in English. This is supported by the graph.
Answers	832	14A, 4d	Spearman's is the more useful measure of correlation because the relationship between the variables is not linear.

Answers	832	14A, 6ai	0.8743
Answers	832	14A, 6aai	0.007765
Answers	832	14A, 6bi	0.304
Answers	832	14A, 6bii	0.0418
Answers	832	14B, 1	6 replaced with 7
Answers	832	14B, 2	Added: Thus, the treatment leads to a significant reduction in symptoms.
Answers	832	14B, 4	Added: There is insufficient evidence to suggest that the course helped.
Answers	832	14B, 5	Added: There is insufficient evidence to suggest that the bus is late more than 10% of the time.
Answers	833	14D, 1ai	0.7206
Answers	833	14D, 1aai	p-value = 0.4878
Answers	833	14D, 1cii	p-value = 0.00860
Answers	833	14D, 2biii	\$5.02
Answers	833	14D, 3a	Added: p-value = 0.00112, which is highly significant and so the null hypothesis is rejected.
Answers	833	14D, 3b	$y = 3.94x + 78.1$
Answers	833	14D, 3c	192
Answers	833	14E, 1a	$0.166 > 0.05$
Answers	833	14E, 1b	$0.0302 < 0.05$
Answers	833	14E, 1c	$0.412 > 0.10$
Answers	833	14E, 2d	23.48 (instead of 23.4766)
Answers	833	14E, 3g	First part of answer deleted (one-tailed test)
Answers	833	14F, 1b	p-value = 0.421
Answers	833	14F, 2a	p-value = $0.058 > 0.05$
Answers	833	14F, 2b	p-value = $0.066 > 0.05$
Answers	833	14F, 2c	p-value = $0.0952 < 0.10$
Answers	833	14C, 3c	A constant rate is assumed for the Poisson distribution, which may not be appropriate as the number of goals conceded depends on the strength of the opposition, the players available, the weather, etc.
Answers	834	14I, 1	Differences: 7; 1; 7; 7; 8; 9; 4; -5; 5; 6 p-value $0.00233 < 0.01$, significant, so reject H_0 <0 subscript>
Answers	834	14I, 2a	Replaced with answer in worked solutions
Answers	834	14I, 2b	Differences: 5; 10; 6; 8; 3; -1 p-value $0.540 > 0.05$, not significant so insufficient evidence to reject H_0 <0 subscript>
Answers	834	14K, 1c	Duplicate 10.45 deleted 'normal' changed to 'uniform'
Answers	834	14K, 2b	Changed second part of answer to: $0.430 > 0.10$ not significant so no reason to reject the null hypothesis that the last number on the lottery tickets follows a normal distribution.
Answers	835	14K, 3a	6.8 changed to 6.83; 148.56 changed to 148.5; 6.8 changed to 6.83

Answers	835	14K, 3b	Line break inserted
Answers	835	14K, 5b	this' replaced with 'they'
Answers	835	14K, 5c	values in table corrected
Answers	835	14K, 5d	values in table corrected
Answers	835	14K, 5f	7.61 corrected to 7.40
			58.4 > 11.3
Answers	835	14K, 5gi	mean= 105; standard deviation = 13.56
Answers	835	14K, 5gii	quite far from' replaced with 'somewhat higher for'
Answers	835	14L, 1	69.45 replaced with 69.44
			6.95 deleted
Answers	835	14L, 2b	4 degrees of freedom deleted
			p value = 0.7639
Answers	836	14L, 3a	spacing corrected
Answers	836	14L, 3d	first two columns'
Answers	836	14L, 3e	0.0147 (2 deleted)
Answers	836	14L, 4a	11.67 in table corrected to 11.66
			7.95 corrected to 7.96
			p value = 0.00308 < 0.05
Answers	836	14L, 4bii	The parameter for the Poisson is the mean. The mean of the sample is close to the mean for the distribution, so it is likely a correct mean was chosen.
			For the Poisson distribution the mean and variance of the sample should be similar. That is not the case here, which indicates the distribution is not Poisson.
Answers	836	14L, 5b	0.2373, 0.3955, 0.2637, 0.0879, 0.0146, 0.0009766
Answers	836	14L, 5c	0.0495 < 0.05 just significant so some evidence to reject ...
Answers	836	14M, 2b	values in table corrected
			p value = 0.0732 > 0.01
Answers	837	14M, 3b	p value = 0.676
Answers	837	14M, 4b	Table values corrected
			p value corrected to 0.0000524
Answers	837	14M, 5b	p=0.038
Answers	837	14M, 5c	B(50, 0.038)
			Table values corrected
			p-value = 0.67 > 0.05
			The result is not significant so no reason to reject the null hypothesis that the prizes are distributed randomly and independently.
Answers	837	14M, 6a	Table values corrected
			p value corrected to 0.0133
Answers	837	14M, 6b	Table values corrected
			p value corrected to 0.335
Answers	837	14N, 2b	(10x9)/2 =45
Answers	837	14N, 3ai	First line replaced with: Taking a random sample or a sample stratified by gender.
Answers	837	14N, 3aii	First section replaced with: The ratio of boys to girls in each sample should be as equal as possible.

Answers	837	14N, 3aiii	Replaced with: A sample of girls should be compared with a sample of boys for each of the schools. The samples could also be pooled to give boys and girls from both schools. However, to avoid the results being affected by the teaching method, in the pooled sample, the ratio of boys to girls from each school should be equal.
Answers	838	14N, 4bii	The survey is almost certain to find a proportion correct to within 50 households or 5%, but there is a about a $1 - 0.648 = 0.352$ chance it will not be within 10 households or 1%.
Answers	838	14N, 5a	The method of obtaining the sample, to ensure it is appropriate (the two groups should be as uniform as possible) and unbiased. Any confounding factors such as age, employment status or household income. Any assumptions made about the distributions.
Answers	838	14N, 5b	8 tests, assuming there is no difference between male and female Added: This means that finding one significant result is not in itself significant, so the result is not meaningful without further evidence.
Answers	838	14O, 2a	The Poisson distribution assumes that the number of infections occur independently and uniformly. However, new infections are unlikely to be independent as the people already infected may come from the same wards, or be receiving treatment from the same people. The new infections are unlikely to be uniform, because over time more people will have been infected and the number of people susceptible will reduce, so that the rate of new infections will decrease. The hospital may also take precautions such as isolating infected wards which would reduce the rate of infections.
Answers	838	14O, 2b	reaction corrected to infection
Answers	838	14O, 3c	are' inserted
Answers	839	14O, 4d	The box plots indicate there has been an improvement as the median and lower quartile have increased considerably, and the upper quartile has increased slightly though the maximum has not changed.
Answers	839	14O, 4e	p value = 0.00518
Answers	839	14O, 5a	p value = 0.00246

Answers	839	14O, 5b	The mix of males and females implies that heights are not likely to have been normal (i.e. they may be bimodal). Females on average are shorter than males, and this factor has not been considered. The positive relationship between height and salary might reflect that women are paid less than men on average. It would be better to stratify by gender and alter the hypothesis
Answers	839	14P, 2bii	0.935
Answers	839	14P, 3aii	0.925
Answers	839	14P, 3bi	0.0422
Answers	839	14P, 4a	53.7
Answers	839	14P, 4b	0.9364
Answers	839	14P, 7a	If they were adjacent to each other then an event such as a large car crash could mean that several of the hours had more arrivals than usual.
Answers	839	14P, 7c	A type I error would occur if the average number of patients has not fallen but the sample mean ≤ 75 such that the null hypothesis is rejected.
Answers	839	14P, 7d	This is the probability of accepting the null hypothesis that the mean has not fallen and discontinuing the phone line even though it has had a positive effect.
Answers	839	14Q, 1c	How many previous tests had Bruno taken and what were the results? Is there any evidence of trickery or conspiracy between Bruno and the tester? Are the cards marked? Is the distribution of cards in the pack even? Were the cards randomly drawn?
Answers	840	14Q, 1f	the researcher's belief ...
Answers	840	14Q, 2ai	0.0794
Answers	840	14Q, 3a	amended to <
Answers	840	14Q, 3c	0.109
Answers	840	Chapter review, 1b	The correlation is strong and negative, so, the taller the person, the less time they take to run the 100 metres. The sample is fairly small. The time at which someone runs the 100m will also depend on factors such as their age, gender and physical fitness.
Answers	840	Chapter review, 3e	$1.2 < 5.991$
Answers	840	Chapter review, 4c	p value = 0.678
Answers	840	Chapter review, 8bi	0.622
Answers	841	Exam-style questions, 11b	Table amended to remove extra working
Answers	841	Exam-style questions, 13	Middle expression replaced with: $P(X \leq 100) = 0.0347 < 0.05$
Answers	841	Exam-style questions, 14a	X corrected to X 'bar'
Answers	841	Exam-style questions, 15	Extra working deleted p value = $0.0264 < 0.05$

Answers	841	Exam-style questions, 16	0.7996 > 0.05
Answers	842	Exam-style questions, 17	deleted: 'because once you know three of the probabilities, you know the fourth by definition' Equation below the table deleted p-value = 0.7510

Chapter 15

Section	Page	Exercise / question	Correction
In chapter	698	15B, 5a	Added: Only have a single edge between connected towns even when there are several connections per day.
In chapter	702	15D, 2	verify your answer to Exercise 15C question 4 part c
In chapter	703	15D, 3biii	The diameter of a graph is the maximum length of a shortest path between any two vertices. Any vertex can be reached from any other vertex in a walk of length less than or equal to the diameter of the graph.
In chapter	703	15D, 4	Shetland Islands corrected to Hebrides
In chapter	706	15E, 2di	two rooms corrected to three rooms
In chapter	707	15E, 5a	Changes to diagram made, added loops to A and E with an arrow in a single direction
In chapter	712	15F, 1	added 'to find the WEIGHT OF the minimum'
In chapter	713	15F, 6	in metres' added
In chapter	717	15G, 2bii	explain why he never has to walk down a street without delivering letters.
In chapter	717	15G, 3b	added: , and this journey costs \$7
In chapter	725	15I, 1	Numbering corrected (parts I and ii)
In chapter	727	15J, 1ii	added in 'where possible'
In chapter	729	Chapter review, 4d	between all vertices' amended to 'between each pair of vertices ...'
In chapter	731	Exam-style questions, 13c	Suggest an edge which could be removed in order that it would be impossible to construct a Hamiltonian cycle in the remaining subgraph.
In chapter	731	Exam-style questions, 14a	re-numbered part a and part b
In chapter	733	Exam-style questions, 21	A corrected to C in the diagram
Answers	842	Skills check, 2a	vector added
Answers	842	Skills check, 2c	The long-term probability of being in state 1 is 0.6 and in state 2 is 0.4.
Answers	842	15A, 6a	Leeds corrected in diagram
Answers	843	15B, 3aai	A in-degree 2 and out-degree 2, B in-degree 2 and out-degree 1, C in-degree 2 and out-degree 3, and D in-degree 2 and out-degree 2.
Answers	843	15B, 3bii	and' added where required throughout
Answers	843	15B, 5a	Bernried (spelling corrected)

Answers	843	15B, 5b	Any one from: It is easier to see which towns are connected, the routes between the towns, and which journeys have a return voyage.
Answers	843	15B, 5c	Starnberg and Ammerland, and Tutzing and Starnberg
Answers	843	15B, 5d	Bernried spelling corrected
Answers	843	15B, 5e	Bernried spelling corrected
Answers	843	15D, 1bi	ABDA
Answers	843	15D, 2	M+ added
Answers	843	15D, 3aiii	=6 replaced with ,therefore 6
Answers	844	15D, 4c	Matrix M added
			Therefore, at least one journey between two ports requires 5 ferry trips. Since S4 has zero elements only for trips between Eigg and Tiree, this route takes 5 trips, and these two ports are the furthest apart.
Answers	844	15E, 1	numbering corrected
Answers	844	15E, 2di	D, B and E
Answers	844	15E, 2dii	25% in D and 18.8% in each of B and E
Answers	845	15E, 4c	Bella corrected to Belle
Answers	845	15E, 5a	text: 'entering each of' corrected to 'being in'
Answers	845	15F, 2d	Final values (AB, BG) corrected to: BG (or CF), AB
Answers	845	15F, 4a	\$38,000
Answers	845	15F, 4bii	BD, AE, DC, DE, AF
			\$40,000
Answers	845	15G, 1c	added: or ABCDEFBECBFA, repeated edges CB and BF, weight 66
Answers	845	15G, 2bii	If every edge is duplicated then every vertex would have an even degree. An Eulerian circuit would be any route that traverses each edge of the graph twice, for instance, ABCDEFGABGBFBCFCECDEFGA, or any Eulerian trail immediately followed by the same trail.
Answers	846	15H, 1b	BF 15
Answers	846	15H, 3b	Word 'has' deleted
Answers	846	15I, 1cii	AEDCBFA or AEDCFBA
Answers	846	15J, 1aii	No other lower bound is higher.
Answers	846	15J, 1bii	Deleting B gives a lower bound of 29, deleting D or E will give a lower bound of 30, while deleting C will give a lower bound of 31
Answers	846	15J, 1cii	added: deleting D, E or F gives 22
Answers	846	15J, 1dii	added: deleting B, C or E gives 85
Answers	847	Chapter review, 1a	There are EXACTLY two odd vertices, C and F
Answers	847	Chapter review, 4ai	No, it is symmetric
Answers	847	Chapter review, 8b	DF $5 + 4 = 9$
Answers	847	Chapter review, 9c	3 table values corrected

Answers	847	Chapter review, 9d	ACEDBA, if mapped onto the original graph the route would be ACEDCBCA
Answers	847	Exam-style questions, 10a	Every vertex is of even degree
Answers	847	Exam-style questions, 11a	Q becomes 11
Answers	847	Exam-style questions, 11b	deleted
Answers	847	Exam-style questions, 12	word 'arc' changed to 'edge'
Answers	848	Exam-style questions, 13a	FEDCABF
Answers	848	Exam-style questions, 18a	AE corrected from 6 to 9

Practice exam papers

Section	Page	Exercise / question	Correction
In chapter	750-764	All throughout	Total mark allocation for Qs moved to RHS
In chapter	750	Paper 1, 1	$3\pi/4$
In chapter	750	Paper 1, 1b	$3\pi/4$
In chapter	750	Paper 1, 3c	Hence' replaced with 'Use an algebraic method to ...'
In chapter	753	Paper 1, 10d	Find the probability that, on a particular day, the number of emails Katherine receives, added to the number of emails Jane receives, is 50 or less.
In chapter	758	Paper 2, 4b	Given that $a = -7$, find
In chapter	759	Paper 2, 5	A drone
In chapter	759	Paper 2, 5	At this moment' corrected to: 'the instant the drone passes over P; word 'drone' removed in front of 'pilot'
In chapter	759	Paper 2, 5cii	Find the distance the drone has to travel from P TO its landing point.
In chapter	759	Paper 2, 5ciii	Hence write down a vector equation for the new position vector of the drone, in terms of t , from the instant it passes over P until it lands. State the time interval for which this equation is valid.
In chapter	759	Paper 2, 6c	Hence find a matrix M and a diagonal matrix D such that $T = MDM^{-1}$.
In chapter	759	Paper 2, 6d	Find an expression for the number of birds, after n years, at ...
In chapter	759	Paper 2, 6dii	after n years' deleted
In chapter	760	Paper 2, 7	Replaced 't is the time in hours and k is a constant'; with: $R > 0$, t is the time in hours and k is a positive.

In chapter	760	Paper 2, 7a	<p>i Explain why $B = R$ and $B = -R$ are equilibrium points according to this model [1 mark]</p> <p>ii Justify mathematically why $B = R$ is a stable equilibrium point [3 marks]</p> <p>iii Explain in the context of the question why the model is not valid for value of $B < -R$ [2 marks]</p>
In chapter	760	Paper 2, 7bii	inserted at the end: using the given initial condition
Answers	849	Paper 1, 1a	$3\pi/4 = 0.295m^2$
Answers	849	Paper 1, 1b	$3\pi/4 = 1.18m$
Answers	849	Paper 1, 2a	brackets added around AC
Answers	849	Paper 1, 2b	Using supplementary angles ...
Answers	849	Paper 1, 3aii	and hence C is one-to-one' added
Answers	849	Paper 1, 3b	labels added to lines on graph
Answers	849	Paper 1, 3c	Answer replaced
Answers	849	Paper 1, 5bii	italics removed
Answers	849	Paper 1, 7a	Mark allocation added
Answers	849	Paper 1, 8b	Answer replaced
Answers	849	Paper 1, 9b&c	3 marks
Answers	850	Paper 1, 13c	(2pit) added; mark allocations added
Answers	850	Paper 1, 13e	(2pit) added; mark allocations added
Answers	850	Paper 1, 14a	1 corrected to lower case L throughout
Answers	850	Paper 1, 15b	two arrowheads inserted
Answers	850	Paper 1, 17a	Mark allocation added
Answers	851	Paper 2, 1ai	S italicized
Answers	851	Paper 2, 1aii	x corrected to multiplication sign
Answers	851	Paper 2, 1d	italics removed from d
Answers	851	Paper 2, 1e	C made italic
Answers	851	Paper 2, 1f	x made italic
Answers	851	Paper 2, 2e	brackets corrected; 3 marks
Answers	851	Paper 2, 2f	2 marks
Answers	851	Paper 2, 3a	italics corrected
Answers	851	Paper 2, 3d	italics corrected
Answers	851	Paper 2, 4a	additional working deleted; mark allocation corrected to 2
Answers	851	Paper 2, 4bii	The curve has moved 8 units to the right so $c=8$
Answers	851	Paper 2, 4bii	Mark allocation corrected to 2
Answers	851	Paper 2, 5a	Minus signs corrected, italics corrected
Answers	851	Paper 2, 5b	Minus signs corrected, italics corrected
Answers	852	Paper 2, 5ci	$d =$ added
Answers	852	Paper 2, 5ci	mark allocation corrected to 1
Answers	852	Paper 2, 5ciii	Answer corrected; mark allocation corrected to 3
Answers	852	Paper 2, 6bii	Answer corrected
Answers	852	Paper 2, 6c	Minus signs corrected
Answers	852	Paper 2, 6d	bold/italics corrected; answer corrected

Answers	852	Paper 2, 6f	3400/6800
Answers	852	Paper 2, 7a	Answer added to parts ai, ii and iii