MATHEMATICS HIGHER LEVEL COURSE COMPANION
ERRATA FOR INITIAL PRINT RUN (MARCH 2012)

CHAPTER 1
page 26  Example 18
First line of answer should read:
\[ P_n : S_n = \frac{n}{2} (2u_1 + (n - 1)d) \]

CHAPTER 2
page 55  Example 3
Right-hand column (second line) should read:
\[ \frac{-k}{2a} = \frac{-4}{-4} = 1 \]

page 61  Example 8
Top line of text should be:
Determine the domain and range of the function
\[ y = \frac{1 - 3x}{2x - 1} \] and confirm your answers algebraically.

CHAPTER 3
page 107  Example 6
For part d, the complex number should be:
\[ z = \frac{3i + \sqrt{33}}{\pi} \]

page 117  Examiner's tip (orange box) at top of page
Notice that the results in b and c are equal:
\[(x^2)^n = (x^n)^2, \quad \text{as stated in the properties of conjugate complex numbers, that is,} \]
\[(x^n)^2 = (x^2)^n, \quad n \in \mathbb{Z}. \]

page 121  Investigation – parameters of parabolas
The functions are \( f(x) = ax^2 + bx + c \) and \( f(x) = a(x - h)^2 + k \) respectively.

page 149  Example 35
The last row in the table at the bottom of the page should contain the following polynomial:
\[ 5x^3 + 4x^2 + 4x - 1 \]

CHAPTER 4
page 181  Exercise 4E
Question 3 should be:
Find the gradient function of the curve
\[ y = 2x^2 + \frac{1}{x} \] and then the point on the curve
where the gradient is 3.

page 225  Review exercise (non-GDC)
The function in question 12e should be:
\[ y = (x + 2 + (x - 3))^3 \]

CHAPTER 5
page 266  Example 33
Last line of blue example box (left-hand column) should read:
Total area = \( \frac{1}{2} \times (1 + e^2) \times e = \frac{e}{2} (1 + e^2) \)

CHAPTER 8
page 411  Example 20
First line of right-hand column should read:
\[ \arcsin a = \theta \Rightarrow \sin \theta = a, \quad \frac{\pi}{2} < \theta < \frac{\pi}{2} \]

CHAPTER 9
page 442  Fifth line underneath the heading 'Derivatives of inverse trigonometric functions' should read:
Using \( \frac{dy}{dx} = \frac{1}{\sqrt{1 - x^2}} \) and \( \sin^2 x + \cos^2 x = 1 \) gives
\[ \frac{dy}{dx} = \frac{1}{\sqrt{1 - x^2}} \]

page 458  Example 21
Fourth line down in left-hand column (answer)
should read: \( f(0) = -2 \)

page 461  Underneath heading '9.4 Integration by substitution'; third sentence should read:
To find the integral \( \int (2x + 3)^6 \) it would be easier to
have a single variable to the power of 6 rather than
the expansion of the binomial expression \( (2x + 3)^6 \).

page 488  Text should read:
Find the volume of a torus that is obtained by rotating a circle with the center at \((h, k)\) and a
radius \( r \) about the \( x \)-axis \((h, k, r > 0)\).

CHAPTER 10
page 533  Example 28
The answer to part c should read:
The area under the curve is more than 1. The
triangle ABC with A(1,0), B(0,4) and C(-1,0) fits
in the region under the graph and has area 4.

page 536  Example 32
First line of right-hand column should read:
Use \( F^{-1}(0.506) \)
Last line of right-hand column should read:
Use \( F^{-1}(0.802) \)

CHAPTER 11
page 561  Last line of key point (red box) at top of page
should read:
\[ |v| = |k||u| = -k|u| \]

page 585  Example 29
Replace OA by AO and \( \overrightarrow{OA} \) by \( \overrightarrow{AO} \) throughout example.

page 620  Chapter summary
Penultimate bullet point: as with key point on
page 561, the expression should read:
\[ |v| = |k||u| = -k|u| \]

CHAPTER 15
pages 754 and 757  Practice papers 1 and 2
Top line of purple box should state:
Time allowed: 2 hours

page 758  Practice paper 2
Question 7 should read:
Use substitution to find
\[ \frac{e^{2x}}{4 + e^{4x}} \, dx \]

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