ERRATA
Mathematics: Core Topics HL
WORKED SOLUTIONS

First edition - 2019

The following erratum was made on 27/May/2020

page 359 EXERCISE 8F Question 5 b, should be:

\[ \sin^2 \theta + \cos^2 \theta = 1 \]
\[ . . . \quad \sin^2 \theta + \left( \frac{3}{10} \right)^2 = 1 \]
\[ . . . \quad \sin^2 \theta + \frac{9}{100} = 1 \]
\[ . . . \quad \sin^2 \theta = \frac{91}{100} \]
\[ . . . \quad \sin \theta = \pm \sqrt{\frac{91}{100}} \]
\[ \theta \approx 1.27 \] corresponds to the first quadrant, where \( \sin \theta \) is positive.

So, for \( \theta \approx 1.27 \), \( \sin \theta = \frac{\sqrt{91}}{10} \).
\[ \tan \theta = \frac{\sqrt{91}}{3} = \frac{\sqrt{91}}{3} \]

\( \theta \approx 5.02 \) corresponds to the fourth quadrant, where \( \sin \theta \) is negative.

So, for \( \theta \approx 5.02 \), \( \sin \theta = -\frac{\sqrt{91}}{10} \).
\[ \tan \theta = -\frac{\sqrt{91}}{3} = -\frac{\sqrt{91}}{3} \]

The following erratum was made on 28/Apr/2020

page 728 EXERCISE 15F Question 20, first line should read:

20 Let \( f(x) = \frac{ax + b}{cx + d} \), \( c \neq 0 \)

The following erratum was made on 26/Mar/2020

page 834 EXERCISE 17G.3 Question 13 d, should read:

\[ y = 5 \cos \left( b \left( x - \frac{\pi}{4} \right) \right) + d \]

When \( x = \frac{\pi}{4} \), \( y = 1 \)
\[ . . . \quad 1 = 5 \cos (b \times 0) + d \]
\[ . . . \quad d = -4 \]

When \( x = \frac{13\pi}{4} \), \( y = -4 \)
\[ . . . \quad -4 = 5 \cos (b \times 3\pi) - 4 \]
\[ . . . \quad \cos 3b\pi = 0 \]
\[ . . . \quad 3b\pi = \frac{\pi}{2}, \frac{3\pi}{2}, \frac{5\pi}{2}, \frac{7\pi}{2}, \ldots \]
\[ . . . \quad b = \frac{1}{6}, \frac{1}{2}, \frac{5}{6}, \frac{7}{6}, \ldots \]

\[ y = 5 \cos \left( b \left( x - \frac{\pi}{4} \right) \right) + d \]