




ERRATA

SMARTPREP and Haese Mathematics Mathematics HL Core Flash Cards

First edition - 2016 initial print

The following errata were made on 12/Jan/2017

card 6 **TOPIC 1** should be marked as a calculator card, and replace first sentence in Question **c** with:

- a** A geometric sequence has consecutive terms $k - 2$, $2k$, and k^2 . Find the value of k . 
- b** A sequence is defined by $u_n = \frac{3 - 2n}{4}$, $n \in \mathbb{Z}^+$.
- i** Prove that the sequence is arithmetic.
 - ii** Find the 20th term.
 - iii** Find $\sum_{n=20}^{30} u_n$
- c** Aretha opens a savings account on February 1. She deposits €120 into the account on the first day of each month. The account pays compound interest of 3.4% per annum, compounding monthly on the last day of each month.
- i** Find the value of the fund after interest is deposited on May 31.
 - ii** Write an expression for the value of the fund after k years.
 - iii** Hence find the value of the fund after 15 years.

card 81 **TOPIC 3 ANSWER** to Question **b** should read:

a

$$\begin{aligned} & 1 - \frac{\cos^2 \theta}{1 - \sin \theta} \\ &= 1 - \frac{\cos^2 \theta}{1 - \sin \theta} \cdot \frac{1 + \sin \theta}{1 + \sin \theta} \\ &= 1 - \frac{\cos^2 \theta (1 + \sin \theta)}{1 - \sin^2 \theta} \\ &= 1 - \frac{\cos^2 \theta (1 + \sin \theta)}{\cos^2 \theta} \\ &= -\sin \theta \end{aligned}$$

b

$$\begin{aligned} & \sin\left(\theta + \frac{\pi}{6}\right) \tan\left(\frac{\pi}{2} - \theta\right) \\ &= \left[\sin \theta \cos \frac{\pi}{6} + \cos \theta \sin \frac{\pi}{6}\right] \frac{\sin\left(\frac{\pi}{2} - \theta\right)}{\cos\left(\frac{\pi}{2} - \theta\right)} \\ &= \left[\frac{\sqrt{3}}{2} \sin \theta + \frac{1}{2} \cos \theta\right] \frac{\cos \theta}{\sin \theta} \\ &= \frac{1}{2} \cos \theta \left[\sqrt{3} + \cot \theta\right] \end{aligned}$$

c

$$\begin{aligned} \arccos\left(\frac{1}{2}\right) - \arctan\left(\frac{1}{\sqrt{3}}\right) &= \frac{\pi}{3} - \frac{\pi}{6} \\ &= \frac{\pi}{6} \end{aligned}$$