HSC Mathematics Extension 1 2004
Quick Answers

Disclaimer

These answers are intended as a quick guide only. To save space there are no proofs or diagrams. For greater detail please refer to fully worked solutions.

Question 1

(b) $x < -1$ or $x > \frac{1}{3}$.

(c) $(13, 4)$.

(d) $\frac{\pi}{6}$.

(e) $2\frac{2}{5}$.

Question 2

(a) $\frac{1}{10}$.

(b) $\frac{-6x}{\sqrt{1-9x^4}}$.

(c) 9.

(d) (i) $10\cos\left(x - \tan^{-1}\frac{3}{4}\right)$.

(ii) 1.691 or 5.879

(e) (i) 1820.

(ii) $\frac{9}{130}$.

Question 3

(a) $\frac{\sin 8x + 8x}{16} + c$

(b) (i) $b = -11$.

(ii) $3x - 8$

(c) (i) $x = \sqrt{16 - h^2}$

(ii) 0.077 metres / hour.

(d) (iii) 44°.

Question 4

(b) (ii) $y = -4a$.

(c) (i) 0.522

(iii) at least 30 weeks.

Question 5

(a) (ii) $x = \frac{\tan t + 2}{1 - 2\tan t}$.

(b) (ii) $0 < x \leq 1$.

(iii) $y = \sqrt{\frac{1-x}{x}}$.

(v) 0.71

Question 6

(a) (i) 90°.

(ii) $AD = 2r$.

(b) (v) $15° < \theta < 45°$ or $72° < \theta < 75°$.

Question 7

(a) (iii) 4:28 am.

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