MTH1002 Practice Test B Answers

1a) Even b) Neither

Similar questions: Practical 2, q. 1; Notes 2, p. 1; Coursework, q. 1.

2. $z = 6e^{5\pi i/6}$

Similar questions: Practical 3, q. 1; Notes 3, pp. 2 - 3

3. $z_0 = e^{i\pi/8}$, $z_1 = e^{5\pi i/8}$, $z_2 = e^{9\pi i/8}$, $z_3 = e^{13\pi i/8}$

Similar questions: Notes 3, pp. 5 - 6; Practical 3, q. 2

4. $$\lim_{x\to\infty} \frac{x^4 + x - 1}{x^5 + x^2 + 2} = 0$$

$$\lim_{t\to 0} \frac{e^{at} - e^{-at}}{t} = 2a$$

Similar questions: Practical 4, qq. 2, 3 and 6; Notes, pp. 2 + 4; Coursework, q. 6

5 $$\frac{df}{dt} = \cos u \cdot \omega = \omega \cos(\omega t + \phi)$$

$$\frac{dg}{dt} = 2\,\frac{t - t^{-3}}{t^2 + t^{-2}} = 2\,\frac{t^4 - 1}{t^5 + t}$$

Similar questions: Practical 5, qq. 1 - 3. Notes 5, pp. 4 - 6

6. $x = 2/5$ and $x = 0$.
Similar questions: Practical 6, q. 7.
Notes 6, p. 9

7. The absolute minimum is -1 and the absolute maximum is 10.
Similar questions: Practical 6, qq. 2, 8