

Solomon Practice Paper

Pure Mathematics 4C

Time allowed: 90 minutes

Centre: www.CasperYC.club

Name:

Teacher:

| Question | Points | Score |
|----------|--------|-------|
| 1 | 6 | |
| 2 | 9 | |
| 3 | 9 | |
| 4 | 10 | |
| 5 | 12 | |
| 6 | 13 | |
| 7 | 16 | |
| Total: | 75 | |

How I can achieve better:

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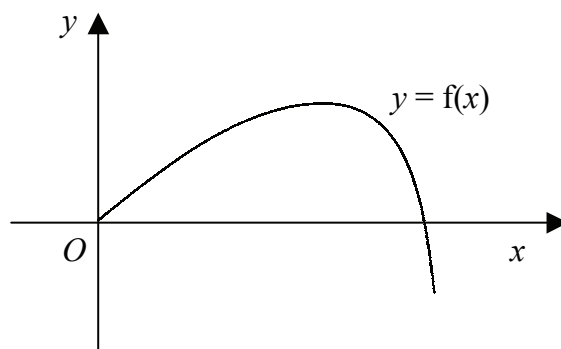


Last updated: December 24, 2025



5. Figure shows part of the curve $y = f(x)$ where

$$f(x) \equiv 2x - \tan(x), \quad x \in \mathbb{R}, \quad 0 \leq x < \frac{\pi}{2}.$$



- (a) Show that there is a root, α , of the equation $f(x) = 0$ in the interval $(1, 1.5)$. [2]
- (b) Use the Newton-Raphson method with an initial value of $x = 1.25$ to find α correct to 2 decimal places and justify the accuracy of your answer. [7]
- (c) Explain with the aid of a diagram why the Newton-Raphson method fails if an initial value of $x = 0.75$ is used when trying to find α . [3]

Total: 12



