

Solomon Practice Paper

Core Mathematics 3D

Time allowed: 90 minutes

Centre: www.CasperYC.club

Name:

Teacher:

Question	Points	Score
1	5	
2	6	
3	8	
4	9	
5	10	
6	11	
7	12	
8	14	
Total:	75	

How I can achieve better:

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Last updated:

July 14, 2025



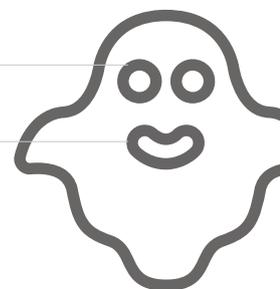
3. (a) Given that $y = \ln(x)$, find expressions in terms of y for [4]
- $\log_2(x)$,
 - $\ln\left(\frac{x^2}{e}\right)$.

- (b) Hence, or otherwise, solve the equation [4]

$$\log_2(x) = 4 - \ln\left(\frac{x^2}{e}\right),$$

giving your answer to 2 decimal places.

Total: 8



5.

$$f(x) = 3 - \frac{x-1}{x-3} + \frac{x+11}{2x^2-5x-3}, \quad x \in \mathbb{R}, x < -1.$$

(a) Show that

$$f(x) = \frac{4x-1}{2x+1}.$$

(b) Find an equation for the tangent to the curve $y = f(x)$ at the point where $x = -2$, giving your answer in the form $ax + by + c = 0$, where a, b and c are integers.

Total: 10

