

Solomon Practice Paper

Core Mathematics 2H

Time allowed: 90 minutes

Centre: www.CasperYC.club

Name:

Teacher:

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

How I can achieve better:

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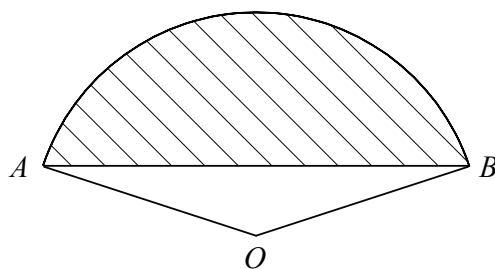


Last updated:

December 24, 2025



2. Figure shows the sector OAB of a circle, centre O , in which $\angle AOB = 2.5$ radians.



Given that the perimeter of the sector is 36 cm,

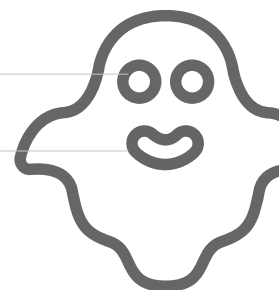
(a) find the length OA ,

[2]

(b) find the area of the shaded segment.

[3]

Total: 5

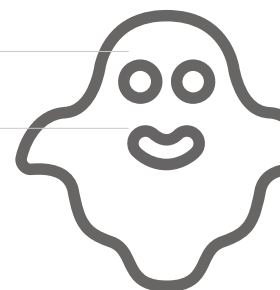


5. (a) Describe fully a single transformation that maps the graph of $y = 3^x$ onto the graph of $y = \left(\frac{1}{3}\right)^x$. [1]
- (b) Sketch on the same diagram the curves $y = \left(\frac{1}{3}\right)^x$ and $y = 2(3^x)$, showing the coordinates of any points where each curve crosses the coordinate axes. [3]

The curves $y = \left(\frac{1}{3}\right)^x$ and $y = 2(3^x)$ intersect at the point P .

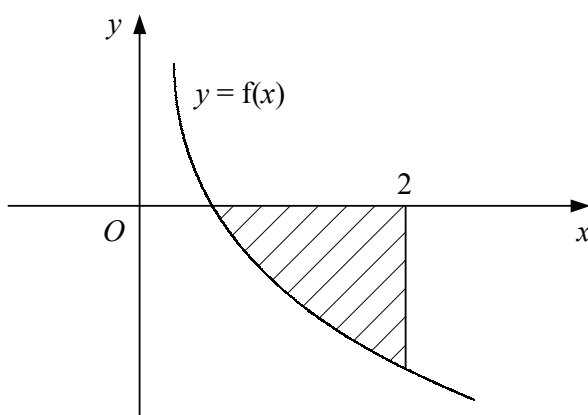
- (c) Find the x -coordinate of P to 2 decimal places and show that the y -coordinate of P is $\sqrt{2}$. [5]

Total: 9



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

$$f(x) = \frac{1 - 8x^3}{x^2}, \quad x \neq 0.$$



- (a) Solve the equation $f(x) = 0$. [3]
- (b) Find $\int f(x) dx$. [3]
- (c) Find the area of the shaded region bounded by the curve $y = f(x)$, the x -axis and the line $x = 2$. [3]

Total: 9

