

# Solomon Practice Paper

## Core Mathematics 2A

Time allowed: 90 minutes

Centre: [www.CasperYC.club](http://www.CasperYC.club)

Name:

Teacher:

Question	Points	Score
1	5	
2	5	
3	6	
4	7	
5	7	
6	10	
7	11	
8	11	
9	13	
Total:	75	

How I can achieve better:

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Last updated:

December 24, 2025











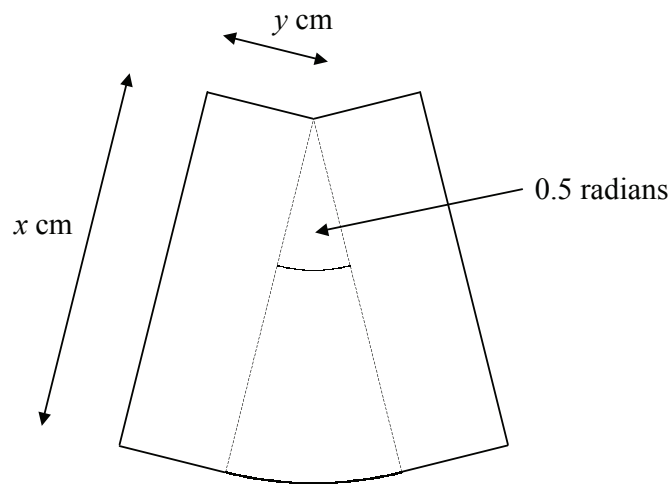








9. Figure shows a design consisting of two rectangles measuring  $x$  cm by  $y$  cm joined to a circular sector of radius  $x$  cm and angle 0.5 radians.



Given that the area of the design is  $50 \text{ cm}^2$ ,

- (a) show that the perimeter,  $P$  cm, of the design is given by [5]

$$P = 2x + \frac{100}{x}.$$

- (b) Find the value of  $x$  for which  $P$  is a minimum. [4]  
 (c) Show that  $P$  is a minimum for this value of  $x$ . [2]  
 (d) Find the minimum value of  $P$  in the form  $k\sqrt{2}$ . [2]

Total: 13

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