

Solomon Practice Paper

Pure Mathematics 1A

Time allowed: 90 minutes

Centre: www.CasperYC.club

Name:

Teacher:

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

How I can achieve better:

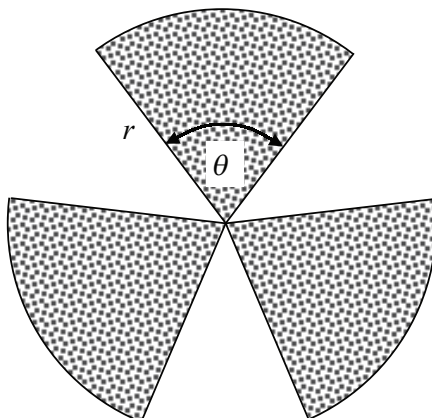
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8. Figure shows the design for a hazard warning-symbol.



It consists of three identical sectors of a circle of radius r centimetres. The sectors are equally spaced and each subtends an angle θ radians at the centre.

Given that the area of the symbol is to be 48 cm^2 ,

- (a) find an expression for θ in terms of r . [3]
- (b) Hence, show that the perimeter of the shape, P cm, is given by [3]

$$P = 6r + \frac{96}{r}.$$

Given that r can vary,

- (c) find the value of r for which P is a minimum and the corresponding value of P . [5]
- (d) justify that your value of P is a minimum. [2]

Total: 13

