

Solomon Practice Paper

Pure Mathematics 1K

Time allowed: 90 minutes

Centre: www.CasperYC.club

Name:

Teacher:

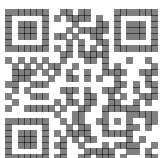
| Question | Points | Score |
|----------|--------|-------|
| 1 | 5 | |
| 2 | 5 | |
| 3 | 8 | |
| 4 | 9 | |
| 5 | 9 | |
| 6 | 12 | |
| 7 | 12 | |
| 8 | 15 | |
| Total: | 75 | |

How I can achieve better:

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Last updated: May 5, 2023



3. The curve $y = 2 \sin(3x + k)$, with x measured in degrees, passes through the point $(10, \sqrt{3})$.

(a) Given that $0 < k < 90^\circ$, show that $k = 30$. [3]

(b) Solve the equation $y = \sqrt{2}$ for values of x in the interval $0 \leq x \leq 180^\circ$ [5]

Total: 8

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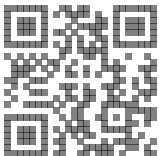
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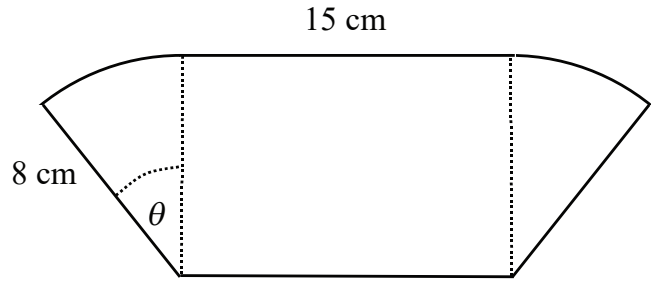
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5. Figure shows a component cut from a metal sheet.



The shape consists of a rectangle of width 15 cm and two circular sectors of radius 8 cm and angle θ .

- (a) Given that the perimeter of the shape is 57.4 cm, show that $\theta = 0.7125$ radians. [3]
- (b) Calculate the area of the shape correct to 2 decimal places. [2]

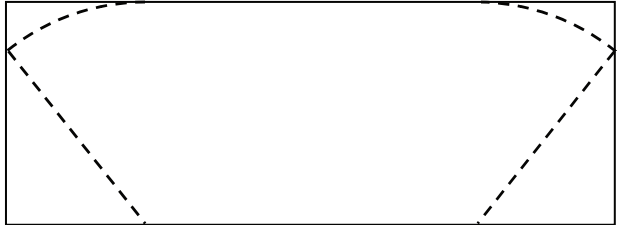


Figure shows how the component is made by cutting four pieces from a rectangular piece of metal sheet.

- (c) Calculate the percentage of the rectangular sheet that is cut off. [4]

Total: 9

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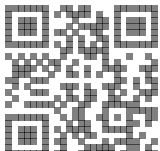
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