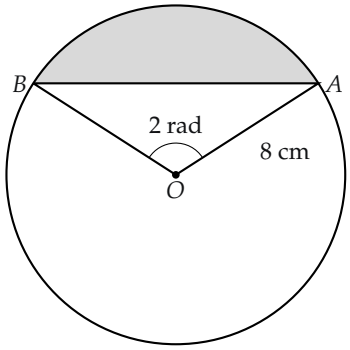
Marked example 3

Paper 2 style · Graphic display calculator

3 6 marks SL 3.4 ●●○ Typical

The diagram shows a circle with centre O and radius 8 cm. The chord AB subtends an angle of 2 radians at O. The shaded region is the minor segment.



(a) Find the area of the sector OAB. [1]

(b) Find the area of the triangle OAB. [2]

(c) Find the area of the shaded segment. [1]

(d) Find the length of the chord AB. [2]

MARKSCHEME (a)

$\frac{1}{2} \times 8^2 \times 2 = 64 \text{ cm}^2$ **A1**

Total 1 mark

MARKSCHEME (b)

$\frac{1}{2} \times 8^2 \times \sin 2$ **(M1)**

$29.1 \text{ cm}^2 \quad (29.0975\ldots)$ **A1**

Total 2 marks

Note The calculator in radians.

MARKSCHEME (c)

$64 - 29.0975\ldots = 34.9 \text{ cm}^2$ **A1**

Total 1 mark

MARKSCHEME (d)

$AB^2 = 8^2 + 8^2 - 2 \times 8 \times 8 \cos 2$ **(M1)**

$AB = 13.5 \text{ cm} \quad (13.4635\ldots)$ **A1**

Total 2 marks

Note Or $AB = 2 \times 8 \sin 1$.

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