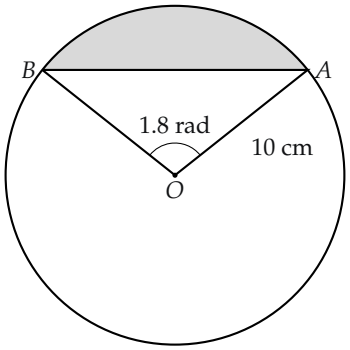
Exercise 3

Paper 2 style · Graphic display calculator

3 6 marks SL 3.4 ●●○ Typical

The diagram shows a circle with centre O and radius 10 cm. The chord AB subtends an angle of 1.8 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]**

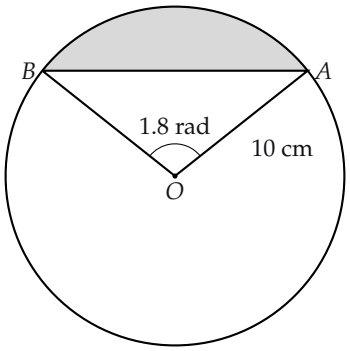
The markscheme is on the next page: try the question first. Written and verified by a practising IB mathematics teacher, produced with AI assistance; solved twice and recomputed by software. Not affiliated with or endorsed by the International Baccalaureate Organization.
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Exercise 3 — markscheme

Paper 2 style · Graphic display calculator

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MARKSCHEME (a)

$\frac{1}{2} \times 10^2 \times 1.8 = 90 \text{ cm}^2$ **A1**

Total 1 mark

MARKSCHEME (b)

$\frac{1}{2} \times 10^2 \times \sin 1.8$ **(M1)**

$48.7 \text{ cm}^2 \quad (48.6923\ldots)$ **A1**

Total 2 marks

Note The calculator in radians.

MARKSCHEME (c)

$90 - 48.6923\ldots = 41.3 \text{ cm}^2$ **A1**

Total 1 mark

MARKSCHEME (d)

$AB^2 = 10^2 + 10^2 - 2 \times 10 \times 10 \cos 1.8$ **(M1)**

$AB = 15.7 \text{ cm} \quad (15.6665\ldots)$ **A1**

Total 2 marks

Note Or $AB = 2 \times 10 \sin 0.9$.