

Solutions

Marking: **M1** a correct method, **A1** the correct answer.

Each answer shows the steps, then the **result**.

2.1

- $C = 2\pi r = 2\pi \times 5 = \mathbf{10\pi}$ cm

2.2

- $A = \pi r^2$
- $\pi \times 6^2 = \mathbf{36\pi}$ cm²

2.3

$$\frac{90}{360} \times 2\pi \times 12 = \frac{1}{4} \times 24\pi = \mathbf{6\pi}$$
 cm

3.1

(a)

$$\frac{120}{360} \times \pi \times 9^2 = \frac{1}{3} \times 81\pi = \mathbf{27\pi}$$
 cm²

(b)

- $\text{arc} = \frac{1}{3} \times 2\pi \times 9 = 6\pi$
- $\text{perimeter} = \text{arc} + 2r = \mathbf{6\pi + 18}$ cm

3.2

- $\pi r^2 = 36\pi$ so $r^2 = 36$
- $r = \mathbf{6}$ cm