

3

Indicates that triangle XZY is isosceles and $\angle XZY = 90^\circ$
May be implied in working or indicated on diagram

M1

By Pythagoras, $|XZ|^2 + |YZ|^2 = |XY|^2$

M1

$$\left(\frac{6}{2}\right)^2 + \left(\frac{6}{2}\right)^2 = |XY|^2 = 18$$

$$|XY| = 3\sqrt{2}$$

M1

Finds area of shaded semicircle

A1

$$\frac{1}{2}\pi\left(\frac{3\sqrt{2}}{2}\right)^2 = \frac{9}{4}\pi \text{ cm}^2$$

Question	Paper 1 – Pure Mathematics 1	Marks
3 cont.	Process to find area of segment $\frac{90}{360} \times \pi \left(\frac{6}{2}\right)^2 - \frac{1}{2} \times 3^2 \times \sin 90 = \left(\frac{9}{4}\pi - \frac{9}{2}\right) \text{cm}^2$ Process to find total area resulting in desired form $\frac{9}{4}\pi + \left(\frac{9}{4}\pi - \frac{9}{2}\right) = \frac{9}{2}(\pi - 1) \text{cm}^2$	M1 A1 [6] [6 marks]