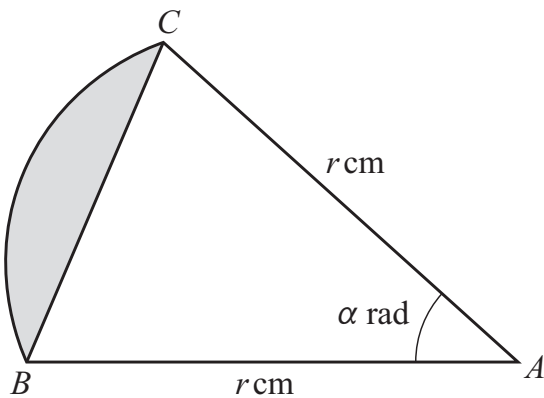


9



The diagram shows a sector ABC of a circle with centre A and radius r cm. The angle BAC is α radians, where $0 < \alpha < \frac{1}{2}\pi$.

- (a)** It is given that the area of the triangle ABC is 4 cm^2 and the area of the sector ABC is $8\alpha \text{ cm}^2$.

Find the exact area of the shaded segment.

[4]

This image shows a full page of white paper with horizontal dashed lines, typical of primary-ruled notebook paper. The lines are evenly spaced and run across the entire width of the page. There are no margins, text, or other markings present.

(b) It is given instead that the length of the chord BC is $\frac{1}{\sqrt{2}}r$ cm but the area of the triangle ABC is still 4 cm^2 .

Find the area of the shaded segment. Give your answer correct to 3 significant figures. [4]

This image shows a full page of white paper with horizontal dashed lines, typical of primary-ruled notebook paper. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.