



The diagram shows a circle with radius r cm and centre O . Points A and B lie on the circle and $ABCD$ is a rectangle. Angle $AOB = 2\theta$ radians and $AD = r$ cm.

- (i) Express the perimeter of the shaded region in terms of r and θ . [3]

[illegible]

[4]

This image shows a full page of white paper with horizontal dotted lines, typical of primary school writing 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.