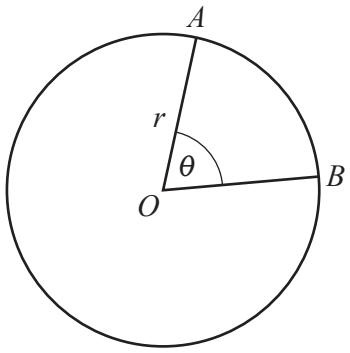
6 In this question lengths are in centimetres and angles are in radians.



The diagram shows a circle with centre O and radius r. The points A and B lie on the circumference of the circle. The area of the minor sector OAB is $25\,\text{cm}^2$. The angle AOB is θ.

(a) Find an expression for the perimeter, P, of the minor sector AOB, in terms of r. [3]

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(b) Given that r can vary, show that P has a minimum value and find this minimum value. [4]