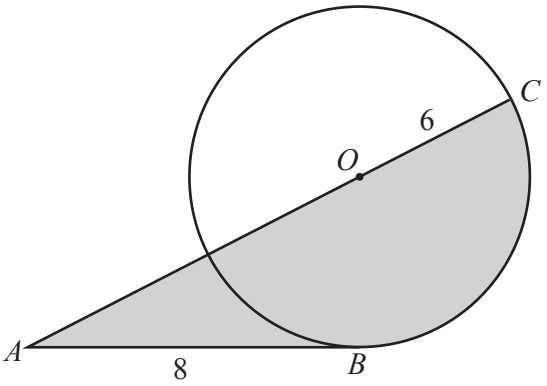
10 In this question all lengths are in centimetres.



The diagram shows a circle centre O with radius 6. The line AB is a tangent to the circle at the point B. The point C lies on the circle such that AOC is a straight line. $AB = 8$.

(a) Find the perimeter of the shaded region. [6]

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(b) Find the area of the shaded region. [3]

11 **(a)** Show that $\dfrac{1}{\sec x - \operatorname{cosec} x} + \dfrac{1}{\sec x + \operatorname{cosec} x} = \dfrac{2\cos x}{1 - \cot^2 x}$. [5]