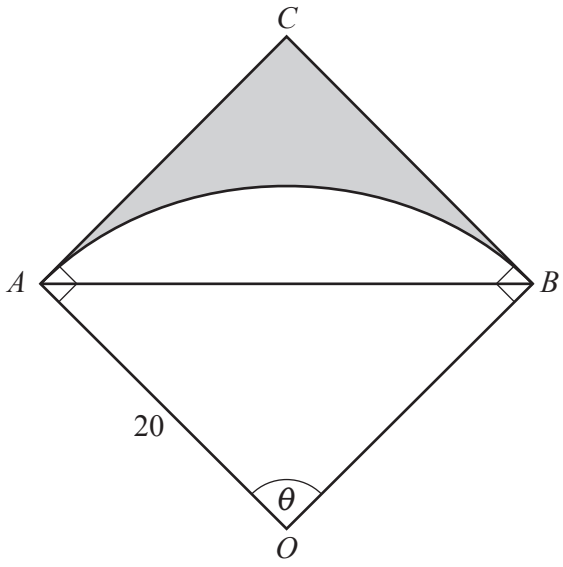
10 In this question, all lengths are in centimetres and all angles are in radians.



The diagram shows the sector, OAB, of a circle with centre O and radius 20. The perimeter of this sector is 65. The lines CA and CB are both tangents to the circle at the points A and B, so that the triangle ABC is isosceles, with $AC = CB$. The angle AOB is equal to θ.

Find the area of the shaded region. [9]

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Additional working space for question 10.