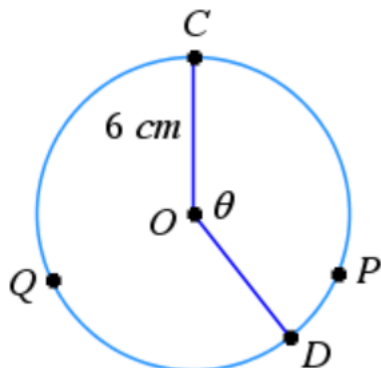(a) The following diagram shows part of a circle with center O and radius 6 cm.

Arc CPD has a length of 7 cm and $C\hat{O}D = \theta$.

    (a) Find the value of θ, giving your answer in radians.   (2 marks)

    (b) Find the area of sector $CODQ$.   (3 marks)

Mark scheme:

    (a) $S = \theta r$

        $7 = \theta(6)$ (M1)

        $\theta = \dfrac{7}{6}$ (A1)

    (b) $A = \frac{1}{2}\theta r^2$

        $A = \dfrac{1}{2}(6)^2 \left(2\pi - \dfrac{7}{6}\right)$ (M1)(A1)

        $A = 18\left(2\pi - \dfrac{7}{6}\right) = 36\pi - 21$ (A1)