In the diagram, *AOD* and *BC* are two parallel straight lines. Arc *AB* is part of a circle with centre *O* and radius 15 cm. Angle $BOA = \theta$ radians. Arc *CD* is part of a circle with centre *O* and radius 10 cm. Angle $COD = \frac{1}{2}\pi$ radians.

(a) Show that $\theta = 0.7297$, correct to 4 decimal places. [1]

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(b) Find the perimeter and the area of the shape *ABCD*. Give your answers correct to 3 significant figures. [7]

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