



The diagram shows a metal plate $OABCDEF$ consisting of sectors of two circles, each with centre O . The radii of sectors AOB and EOF are r cm and the radius of sector COD is $2r$ cm. Angle $AOB = \text{angle } EOF = \theta$ radians and angle $COD = 2\theta$ radians.

It is given that the perimeter of the plate is 14 cm and the area of the plate is 10 cm^2 .

Given that $r > \frac{3}{2}$ and $\theta < \frac{3}{4}$, find the values of r and θ .

[6]

[illegible]