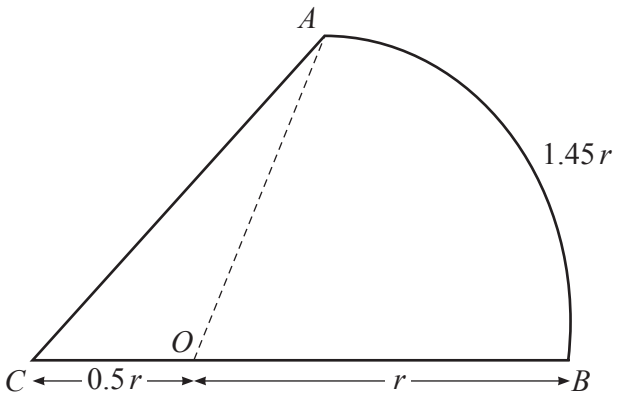
8 In this question all lengths are in centimetres.



The diagram shows the figure ABC. The arc AB is part of a circle, centre O, radius r, and is of length $1.45r$. The point O lies on the straight line CB such that $CO = 0.5r$.

(a) Find, in radians, the angle AOB. [1]

(b) Find the area of ABC, giving your answer in the form kr^2, where k is a constant. [3]

(c) Given that the perimeter of ABC is 12 cm, find the value of r. [4]