

## IB Geometry and Trigonometry Problem 003

The figure is not to scale.



The figure shows a sector of a circle with radius  $r$  cm and central angle  $\theta$ . The perimeter of the sector is  $20$  cm.

A. Show that  $\theta = \frac{20 - 2r}{r}$ .

B. The area of this sector is  $25$  cm<sup>2</sup>. Find the value of  $r$ .