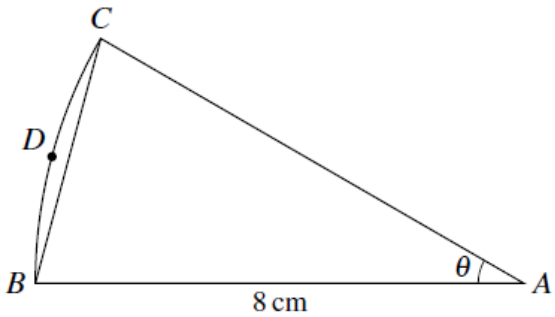
Circular Measure – 2023 June AS Math 9709

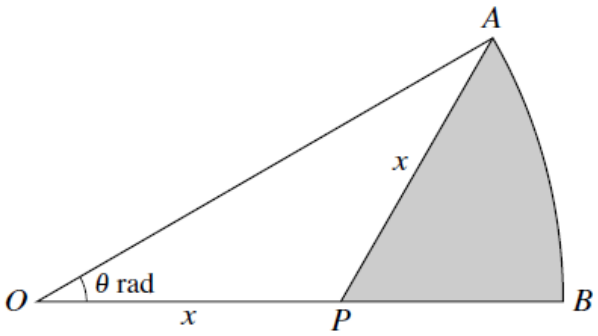
1. June/2023/Paper_9709/11/No.4



The diagram shows a sector ABC of a circle with centre A and radius 8 cm. The area of the sector is $\frac{16}{3}\pi$ cm^2. The point D lies on the arc BC.

Find the perimeter of the segment BCD. [4]

2. June/2023/Paper_9709/12/No.6



The diagram shows a sector OAB of a circle with centre O. Angle $AOB = \theta$ radians and $OP = AP = x$.

(a) Show that the arc length AB is $2x\theta \cos \theta$. [2]

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(b) Find the area of the shaded region APB in terms of x and θ. [4]

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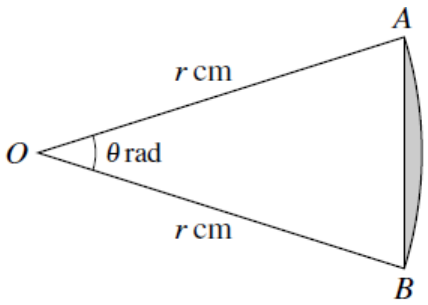
3. June/2023/Paper_9709/13/No.6



The diagram shows a sector OAB of a circle with centre O and radius r cm. Angle $AOB = \theta$ radians. It is given that the length of the arc AB is 9.6 cm and that the area of the sector OAB is 76.8 cm^2.

(a) Find the area of the shaded region. [5]

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(b) Find the perimeter of the shaded region. [2]

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