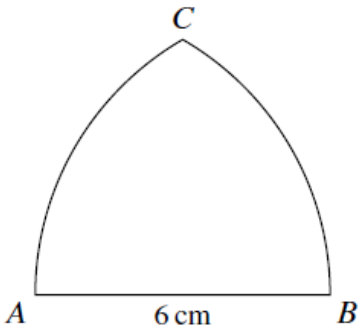
Circular Measure – 2021 AS Nov

1. Nov/2021/Paper_9709/11/No.6

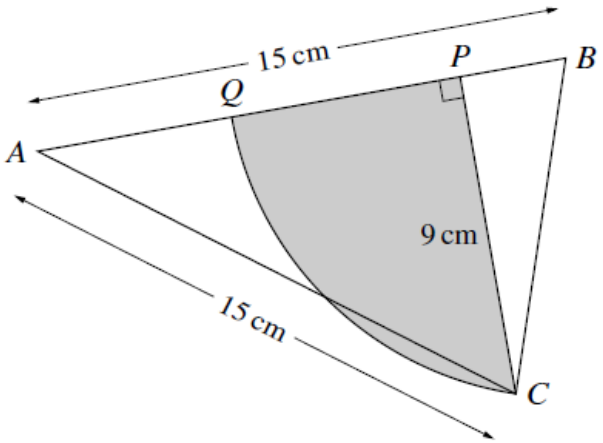


The diagram shows a metal plate ABC in which the sides are the straight line AB and the arcs AC and BC. The line AB has length 6 cm. The arc AC is part of a circle with centre B and radius 6 cm, and the arc BC is part of a circle with centre A and radius 6 cm.

(a) Find the perimeter of the plate, giving your answer in terms of π. [3]

(b) Find the area of the plate, giving your answer in terms of π and $\sqrt{3}$. [4]

2. Nov/2021/Paper_9709/12/No.7

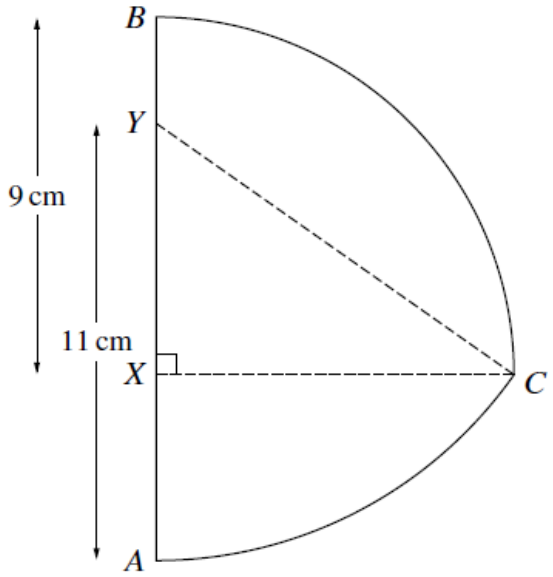


In the diagram the lengths of AB and AC are both 15 cm. The point P is the foot of the perpendicular from C to AB. The length $CP = 9$ cm. An arc of a circle with centre B passes through C and meets AB at Q.

(a) Show that angle $ABC = 1.25$ radians, correct to 3 significant figures. [2]

(b) Calculate the area of the shaded region which is bounded by the arc CQ and the lines CP and PQ. [4]

3. Nov/2021/Paper_9709/13/No.5



In the diagram, X and Y are points on the line AB such that $BX = 9$ cm and $AY = 11$ cm. Arc BC is part of a circle with centre X and radius 9 cm, where CX is perpendicular to AB. Arc AC is part of a circle with centre Y and radius 11 cm.

(a) Show that angle $XYC = 0.9582$ radians, correct to 4 significant figures. [1]

(b) Find the perimeter of ABC. [6]