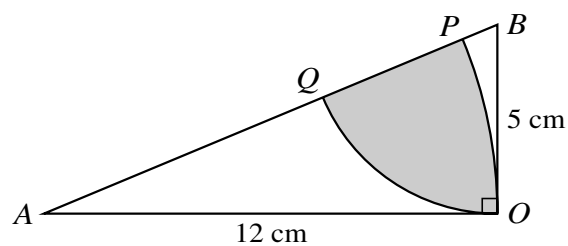**2**

The diagram shows a triangle AOB in which OA is 12 cm, OB is 5 cm and angle AOB is a right angle. Point P lies on AB and OP is an arc of a circle with centre A. Point Q lies on AB and OQ is an arc of a circle with centre B.

  (i) Show that angle BAO is 0.3948 radians, correct to 4 decimal places.   [1]

  (ii) Calculate the area of the shaded region.   [5]