



In the diagram,  $OAXB$  is a sector of a circle with centre  $O$  and radius  $10\text{ cm}$ . The length of the chord  $AB$  is  $12\text{ cm}$ . The line  $OX$  passes through  $M$ , the mid-point of  $AB$ , and  $OX$  is perpendicular to  $AB$ . The shaded region is bounded by the chord  $AB$  and by the arc of a circle with centre  $X$  and radius  $XA$ .

- (i) Show that angle  $AXB$  is  $2.498$  radians, correct to 3 decimal places. [3]

.....

.....

.....

.....

.....

.....

.....

- (ii) Find the perimeter of the shaded region. [3]

.....

.....

.....

.....

.....

.....

.....

---

---

---

---

---

---

(iii) Find the area of the shaded region.

[3]

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.