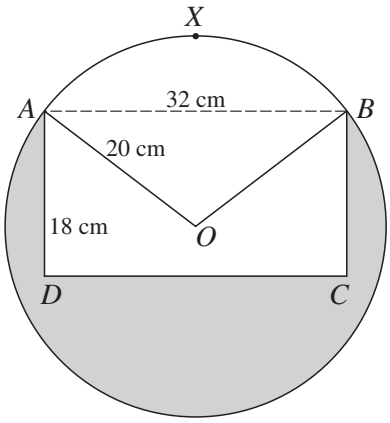
**7**




The diagram shows the circular cross-section of a uniform cylindrical log with centre $O$ and radius 20 cm. The points $A$, $X$ and $B$ lie on the circumference of the cross-section and $AB = 32$ cm.

**(i)** Show that angle $AOB = 1.855$ radians, correct to 3 decimal places. [2]

**(ii)** Find the area of the sector $AXBO$. [2]

The section $AXBCD$, where $ABCD$ is a rectangle with $AD = 18$ cm, is removed.

**(iii)** Find the area of the new cross-section (shown shaded in the diagram). [3]