Core Pure 2

Volumes of Revolution

Chapter Overview

1: Revolving around the -axis.

2: Revolving around the -axis.

3: Volumes of revolution with parametric curves.

4: Modelling



This chapter involves volumes of revolution but with trickier integration than in CP1.

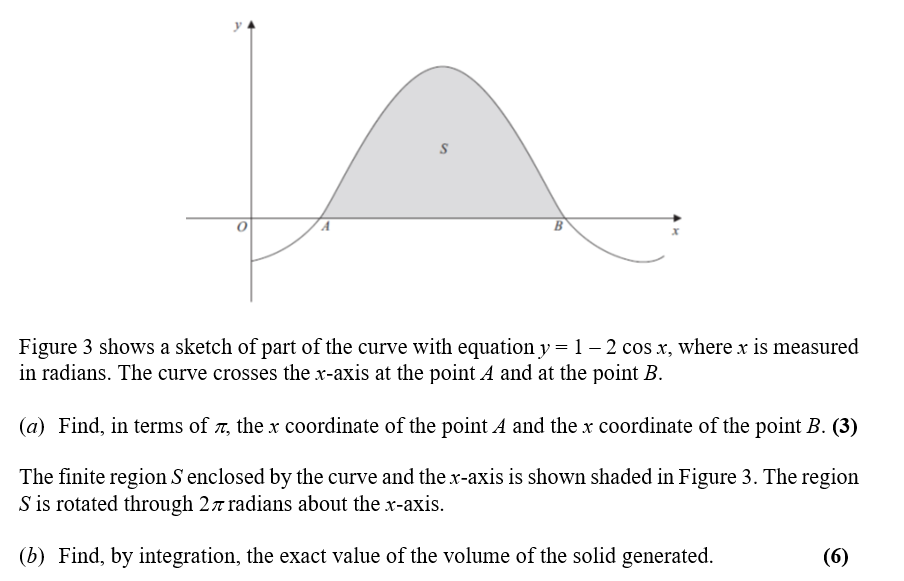
Revolving around the x-axis

**Recap: When revolving around the -axis,**

Example

The region is bounded by the curve with equation , the -axis and . Find the volume of the solid formed when region is rotated through radians about the -axis.

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Ex4A p. 78-80

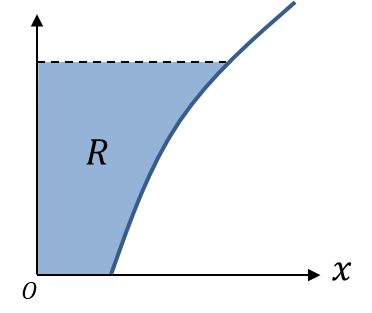
Revolving around the -axis

**Recap**: When revolving around the -axis,

i.e. we are just **swapping the roles of and** .

Example

The diagram shows the curve with equation . The finite region , shown in the diagram, is bounded by the curve, the -axis, the -axis and the line . Region is rotated by radians about the -axis. Use integration to show that the exact value of the volume of the solid generated is .



Ex4B p. 81-83