**VOLUMES FOR SOLIDS OF REVOLUTION**

**SHELL METHOD**

General Solution Method:

Slice parallel to the axis of revolution

Calculate the volume of slice (shell)

Add the volume of all slices (Riemann sum)

Convert to exact volume (Definite integral)

Rotate Region About Horizontal Axis:

Horizontal rectangle

All equations in terms of

Distance measured from top to bottom and right to left

Rotate Region About Vertical Axis:

Vertical rectangle

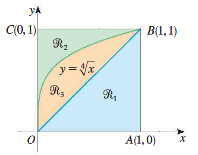
All equations in terms of

Distance measured from right to left & top to bottom

Shell: Volume of Solid

**VOLUMES FOR SOLIDS OF REVOLUTION**

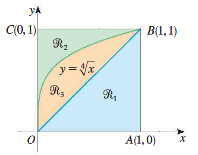
**SHELL METHOD**



Region 1 (about OA, OC, AB, BC):

**VOLUMES FOR SOLIDS OF REVOLUTION**

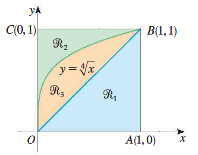
**SHELL METHOD**



Region 2 (about OA, OC, AB, BC):

**VOLUMES FOR SOLIDS OF REVOLUTION**

**SHELL METHOD**



Region 3 (about OA, OC, AB, BC):