**VOLUMES FOR SOLIDS OF REVOLUTION**

**DISK AND WASHER METHODS**

General Solution Method:

Slice perpendicular to the axis of revolution

Calculate the volume of slice (disk or washer)

Add the volume of all slices (Riemann sum)

Convert to exact volume (Definite integral)

Rotate Region About Horizontal Axis:

Vertical rectangle

All equations in terms of

Distance measured from top to bottom

Rotate Region About Vertical Axis:

Horizontal rectangle

All equations in terms of

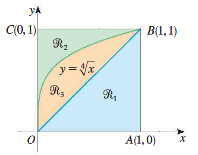
Distance measured from right to left

Disk: Volume of Solid

Washer: Volume of Solid – Volume of Air

**VOLUMES FOR SOLIDS OF REVOLUTION**

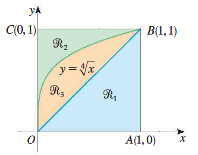
**DISK AND WASHER METHODS**



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

**VOLUMES FOR SOLIDS OF REVOLUTION**

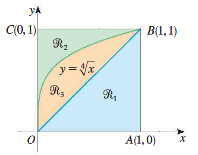
**DISK AND WASHER METHODS**



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

**VOLUMES FOR SOLIDS OF REVOLUTION**

**DISK AND WASHER METHODS**



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