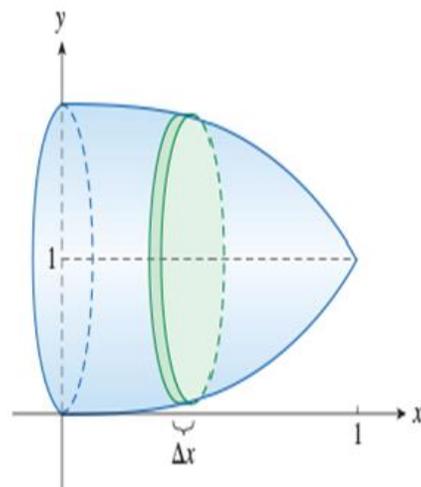**Finish:** Find the volume of the solid obtained by rotating the region bound by $y = x^3$, $y = 1$, $x = 0$ after being rotated about the line $y = 1$.

Again, Sometimes It's Advantageous to Integrate WRT *y*

ex. Find the volume of the solid obtained by rotating the region bound by

Find Volume Using The Washer Method

ex. Explore the solid obtained by rotating the region enclosed by

after rotating it about the x-axis on $[0, 4]$.

ex. Find region enclosed by the curves   and is rotated about the *x*-axis then find its volume.

Thought: what if the above region were rotated about the line $y = 2$?

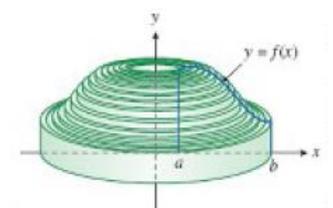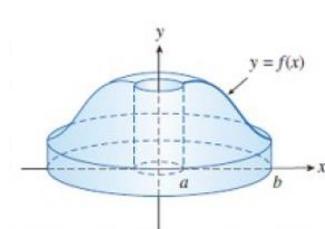ex. Find region enclosed by the curves　　　　　and is rotated about the y-axis then find its volume.
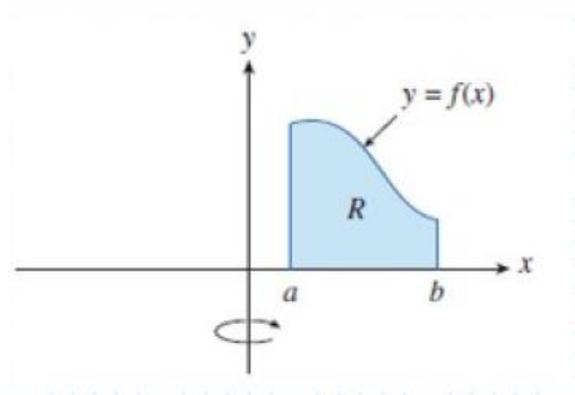
Find Volume Using Cylindrical Shells

Sometimes volumes are _____ to find using disk or washer method.

ex. Sketch region bound by $x = 0$, $y = 0$ and $y = 2x^2 - x^3$.

Next, rotate region _____.

alternate method:

ex. Find the volume of solid obtained by region bound by