

## Summary of Techniques for Finding the Volume of a Solid Revolution

Axis of Revolution	Disk/Washer Method	Shell Method
	Slice a cross section perpendicular to the axis of revolution	Draw a rectangle (to be rotated) parallel to the axis of revolution
<i>Horizontal</i>	<b>Disk:</b> $V = \pi \int_a^b [R(x)]^2 dx$	<b>Shell:</b> $V = 2\pi \int_a^b p(y)h(y) dy$
	<b>Washer:</b> $V = \pi \int_a^b \{[R(x)]^2 - [r(x)]^2\} dx$	
<i>Vertical</i>	<b>Disk:</b> $V = \pi \int_a^b [R(y)]^2 dy$	<b>Shell:</b> $V = 2\pi \int_a^b p(x)h(x) dx$
	<b>Washer:</b> $V = \pi \int_a^b \{[R(y)]^2 - [r(y)]^2\} dy$	