

# Rotate Integrals Cheatsheet

## 1 Disk Method

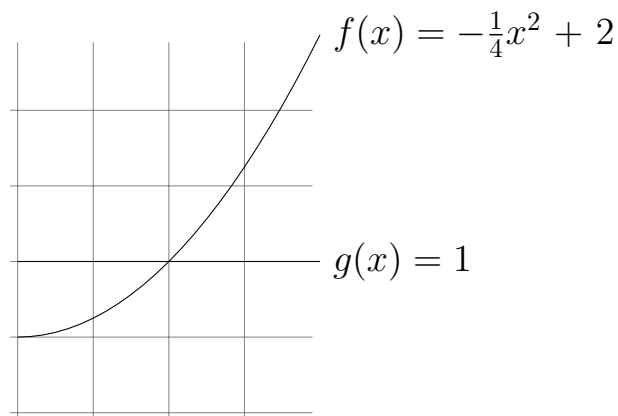
When you have a function  $f(x)$  you can rotate it around the x-axis like this:

$$\pi \int_a^b (f(x))^2 dx$$

Essentially, you are adding up many  $\pi r^2$  Areas multiplied by width, or  $dx$ . So you're adding up a bunch of tiny volumes.

## 2 Washer Method

Subtract two Volumes to rotate it around the x-axis.



## 3 Cross-Sections

### 3.1 Triangle Cross Section