Kerry Ojakian's MTH 32 Class

Class Assignment #2

General Instructions:

- You may work in a group of **at most 3 students**.
- Hand in **one** assignment for your group; write each group member's full name on the assignment.

The Assignment

Consider the graph $y = x^3$ from $x = 0$ to $x = 2$. Do the following:

1. Find the area between the graph and the line $y = -2$.
2. Sketch the graph and shade in the region under the curve.
3. Find the volume when the region under the graph is rotated around the x-axis.
4. Find the volume when the region under the graph is rotated around the y-axis.
5. Setup (but do not solve!) the integral for finding the arclength of the curve.
6. Setup (but do not solve!) the integral for finding the surface area that results when the curve is rotated around the x-axis.