Name: _____

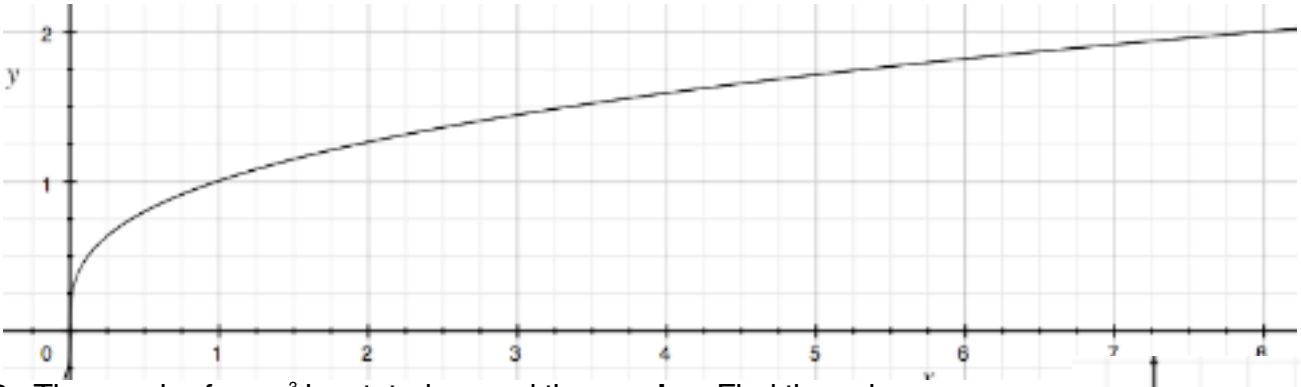
CLASSWORK 121

1. The graph of $y = x^{1/3}$ is rotated around the x-axis. Find the volume created from x = 0 to x = 8.

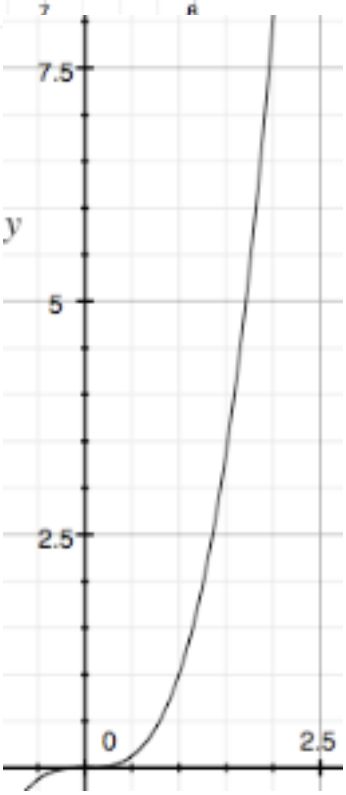
a) What shape is the cross-section?

b) Write an integral that could be used to add up the areas of the cross-sections.

c) Evaluate the integral to find the volume.



2. The graph of $y = x^3$ is rotated around the **y-axis**. Find the volume created from x = 0 to x = 2.

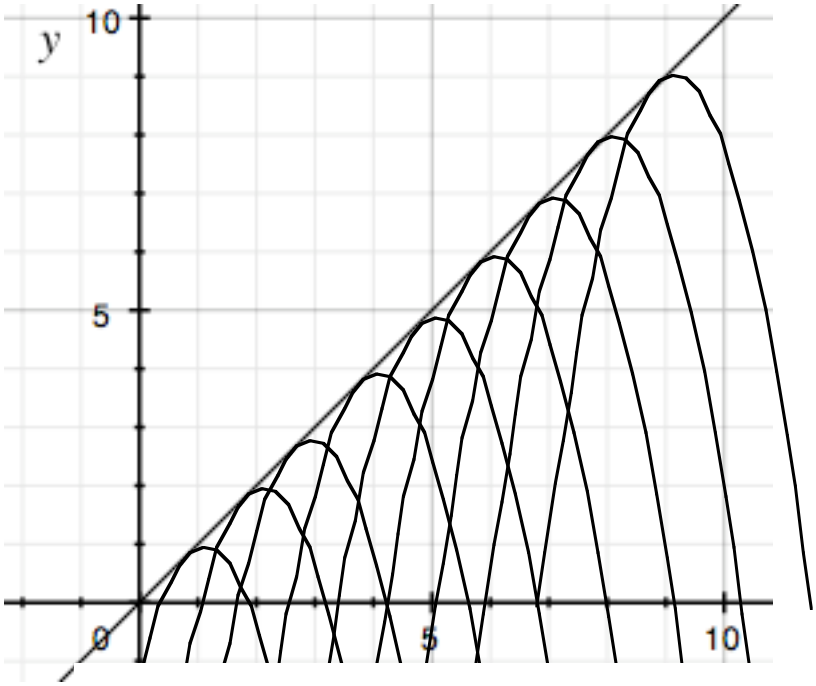


3. The area between the graph of $y = \sqrt{x}$ and the line $y = 4$ is rotated around the line $y = 4$.

a) Find the area of the cross section at $x = 2$

b) Find the volume of the shape created.

4. Lily makes a slanted wall from "parabolic" pieces of rock. Each rock is in the shape of the curve $y = -x^2$. At $x = 0$, the wall is 0 feet tall. At $x = 9$, the wall is 9 feet tall at its highest point. Find the volume of stone needed to construct such a wall.



5. A series of circular slices are placed under the curve $y = 1/x$. Find the volume of the figure between $x = .2$ and $x = 5$.