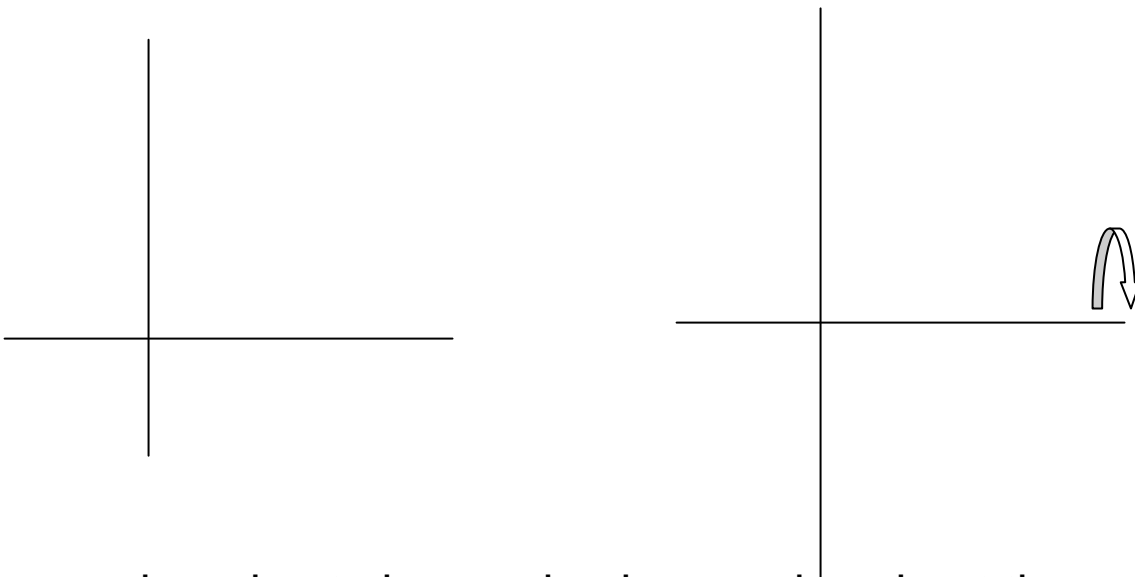


Calculus BC

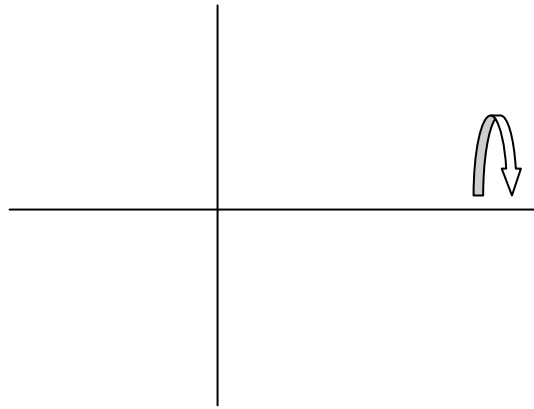
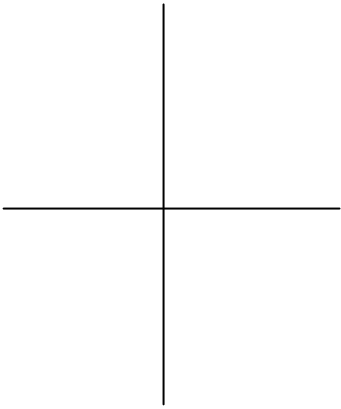
Section 7.2 - Volume - The Disk Method

1. Find the volume of the solid generated by revolving about the x-axis the region bounded by $y = x^3$, $y = 0$, and $x = 1$.



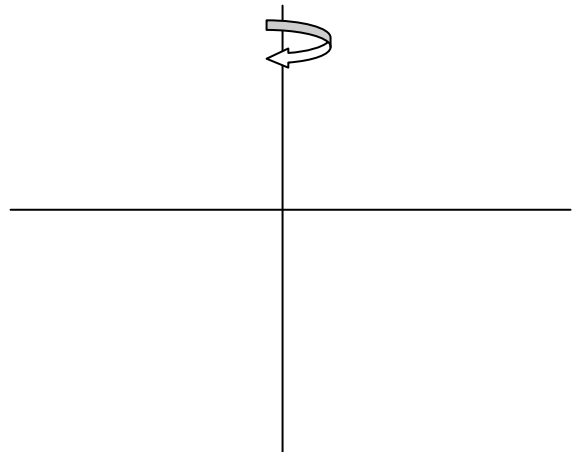
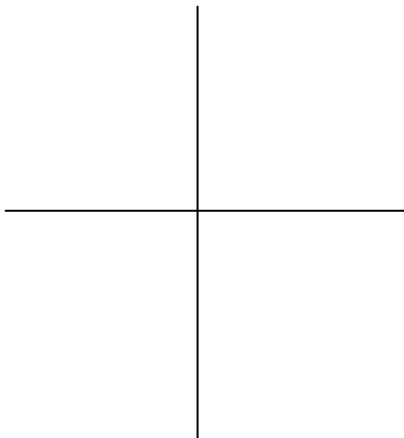
- graph region to be revolved
- revolve about the x-axis
- think of an infinite number of disks stacked together to form the solid – draw a sample disk (cross section of the solid)
- find the volume of a disk:
- add the infinite number of disks together:

2. Revolve the region bounded by $y = \sqrt{9 - x^2}$ and $y = 0$ about the x-axis and find the volume of the solid generated.



3. Find the volume of the solid generated by revolving about the y-axis the region bounded by

$$x = \sqrt{5}y^2, x = 0, y = -1 \text{ and } y = 1.$$

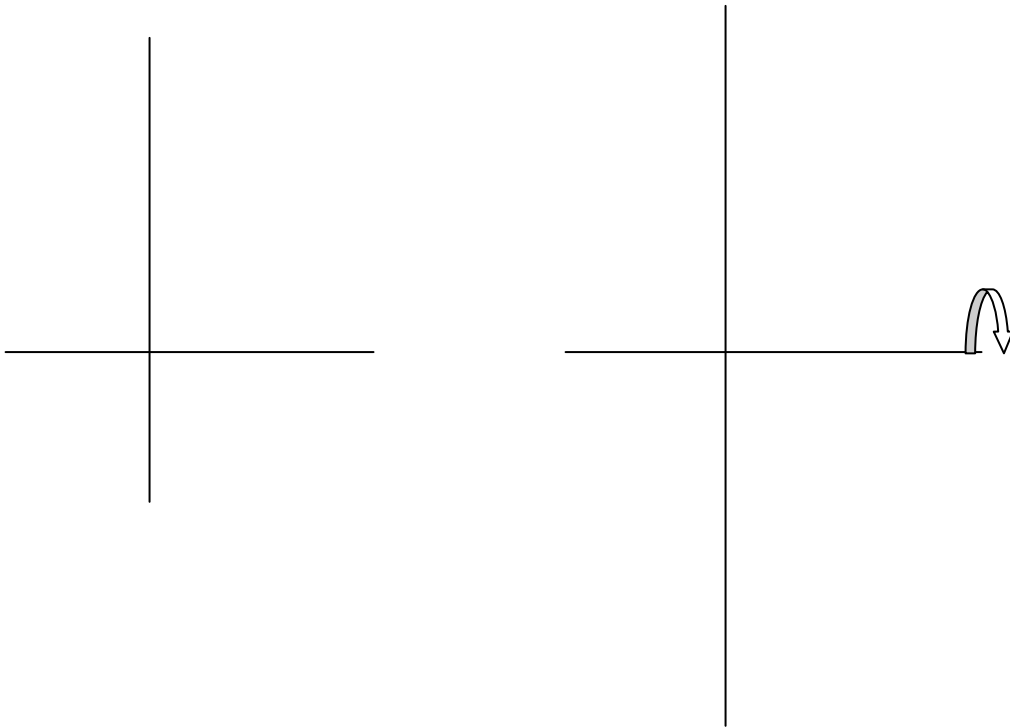


4. Find the volume of the solid generated by revolving about the y-axis the region bounded by

$$x = \frac{2}{y+1}, x = 0, y = 0 \text{ and } y = 1.$$

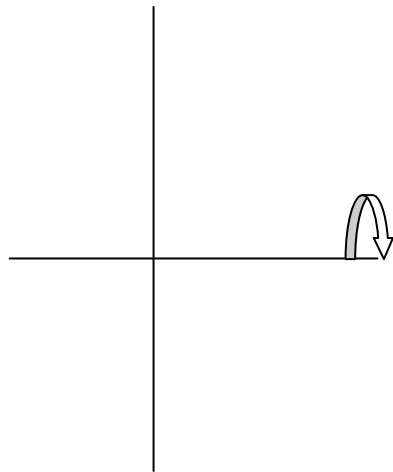
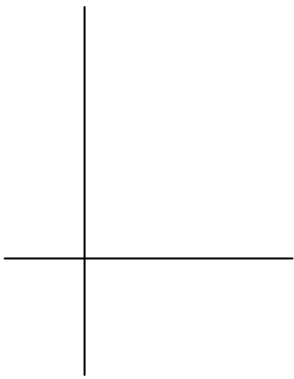


1. Find the volume of the solid generated by revolving about the x-axis the region bounded by $y = x^2 + 2$, $y = 2$, and $x = 2$.

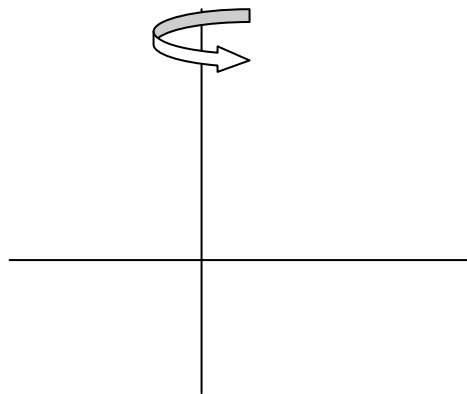
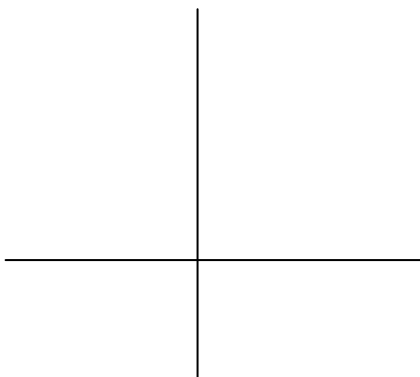


-draw a cross section of the solid

2. Find the volume of the solid generated by revolving about the x-axis the region bounded by $y = 2x$, $y = x$, and $x = 1$.



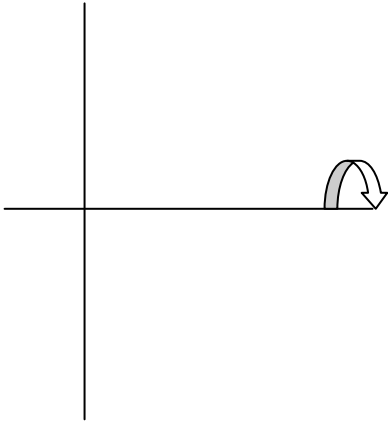
3. Find the volume of the solid generated by revolving about the y-axis the region bounded by $y = x$ and $y = \sqrt{x}$.



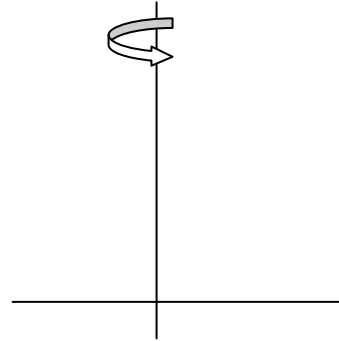
4. Find the volume of the solid generated by revolving the region bounded by $y = x^2$, $x = 2$, and $y = 0$ about:

|

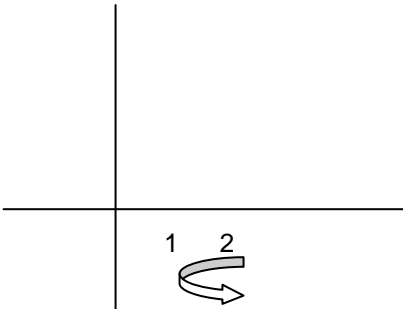
a) x-axis



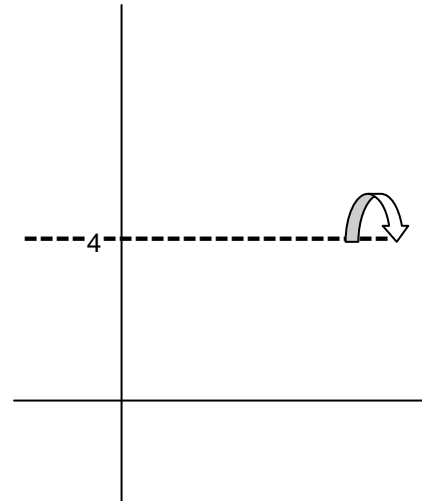
b) y-axis



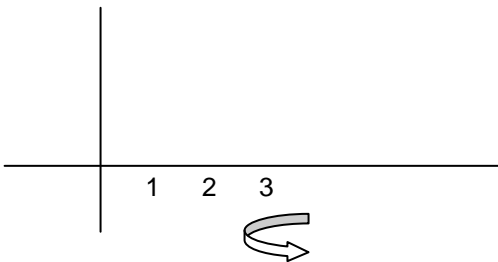
c) line $x = 2$



d) line $y = 4$



e) line $x = 3$



Problems with given bases and cross sections that are squares, circles, triangles.

5. The base of a solid is enclosed by $y = x^2$, $y = 0$, and

$x = 2$. Find the volume of the solid if the cross section perpendicular to the x axis is:

a) a square

b) a semicircle

c) an equilateral triangle