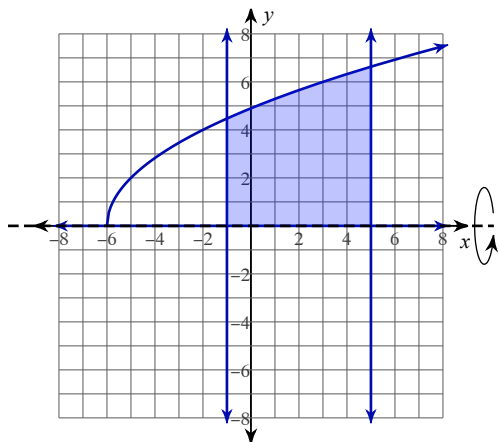


Disc Method - Pt.1

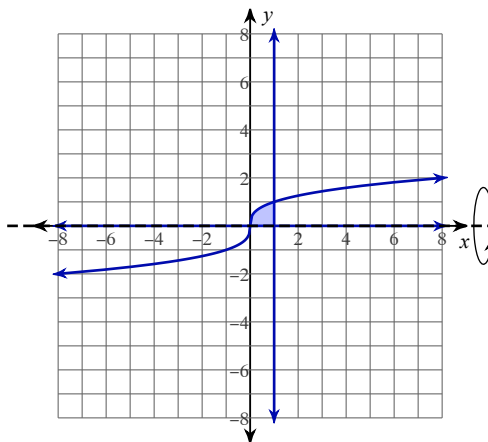
Date _____ Period _____

For each problem, find the volume of the solid that results when the region enclosed by the curves is revolved about the the x -axis.

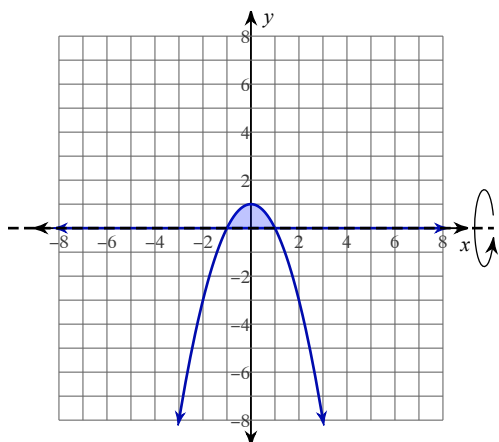
1) $y = 2\sqrt{x+6}$, $y = 0$, $x = -1$, $x = 5$



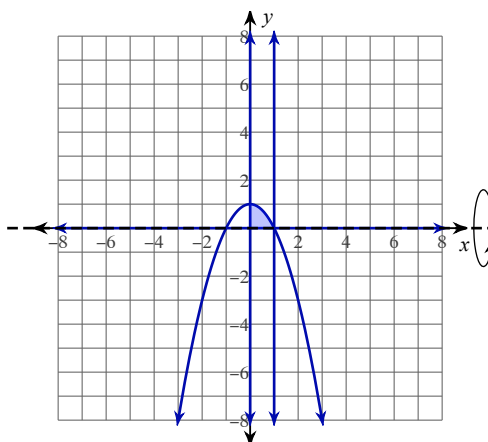
2) $y = \sqrt[3]{x}$, $y = 0$, $x = 1$



3) $y = -x^2 + 1$, $y = 0$

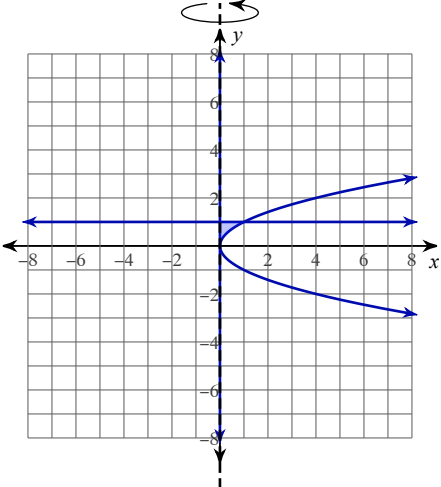


4) $y = -x^2 + 1$, $y = 0$, $x = 0$, $x = 1$

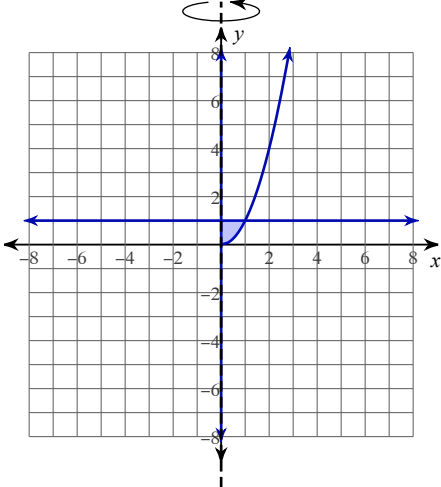


For each problem, find the volume of the solid that results when the region enclosed by the curves is revolved about the the y -axis.

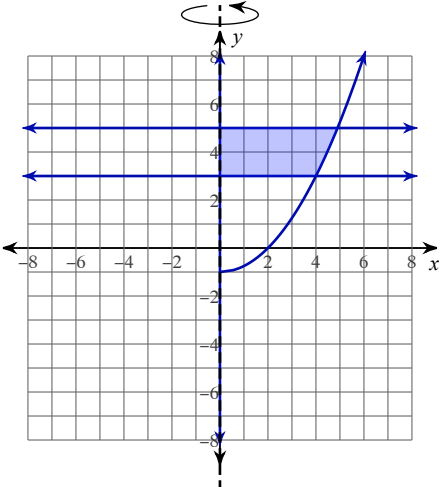
5) $x = y^2, x = 0, y = 1$



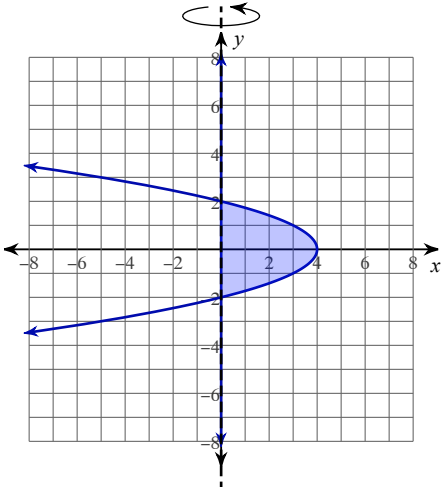
6) $x = \sqrt{y}, x = 0, y = 1$



7) $x = 2\sqrt{y+1}, x = 0, y = 3, y = 5$



8) $x = -y^2 + 4, x = 0$



Answers to Disc Method - Pt.1 (ID: 1)

$$1) \pi \int_{-1}^5 (2\sqrt{x+6})^2 dx \\ = 192\pi \approx 603.186$$

$$2) \pi \int_0^1 (\sqrt[3]{x})^2 dx \\ = \frac{3}{5}\pi \approx 1.885$$

$$3) \pi \int_{-1}^1 (-x^2 + 1)^2 dx \\ = \frac{16}{15}\pi \approx 3.351$$

$$4) \pi \int_0^1 (-x^2 + 1)^2 dx \\ = \frac{8}{15}\pi \approx 1.676$$

$$5) \pi \int_0^1 (y^2)^2 dy \\ = \frac{1}{5}\pi \approx 0.628$$

$$6) \pi \int_0^1 (\sqrt{y})^2 dy \\ = \frac{1}{2}\pi \approx 1.571$$

$$7) \pi \int_3^5 (2\sqrt{y+1})^2 dy \\ = 40\pi \approx 125.664$$

$$8) \pi \int_{-2}^2 (-y^2 + 4)^2 dy \\ = \frac{512}{15}\pi \approx 107.233$$