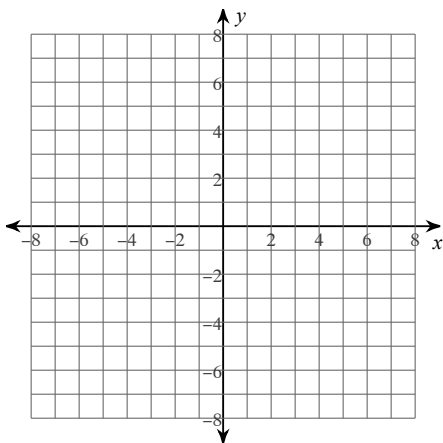


Volume DISC Method Practice

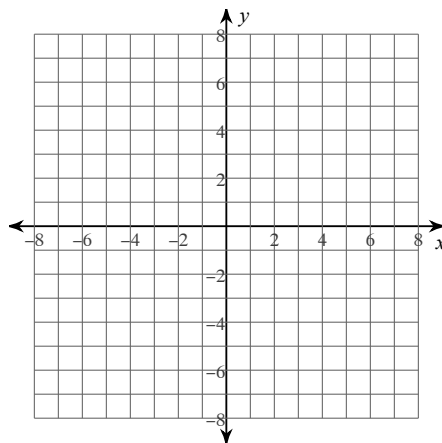
Date _____ Period _____

For each problem, find the volume of the solid that results when the region enclosed by the curves is revolved about the the given axis. You may use the provided graph to sketch the curves and shade the enclosed region.

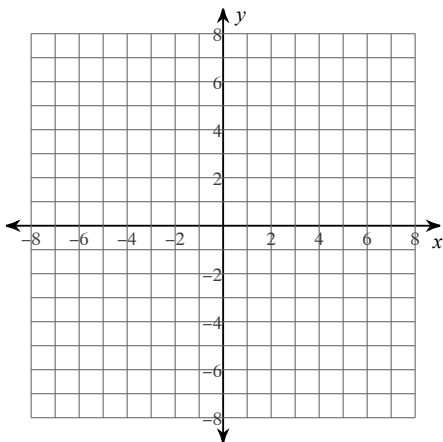
1) $y = -x^2 + 3$, $y = 2$, $x = 0$, $x = 1$
Axis: $y = 2$



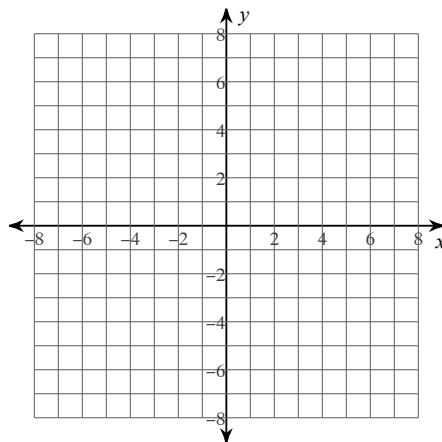
2) $y = -x^2 + 6$, $y = 2$, $x = 0$, $x = 2$
Axis: $y = 2$



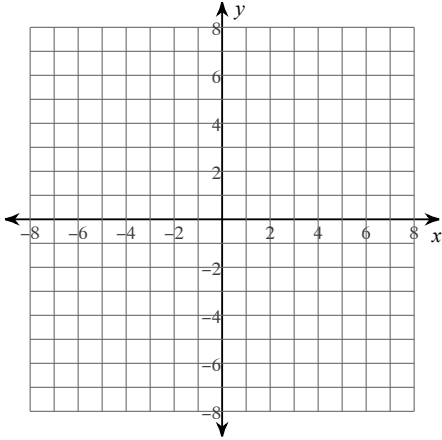
3) $y = -x^2 + 6$, $y = 2$
Axis: $y = 2$



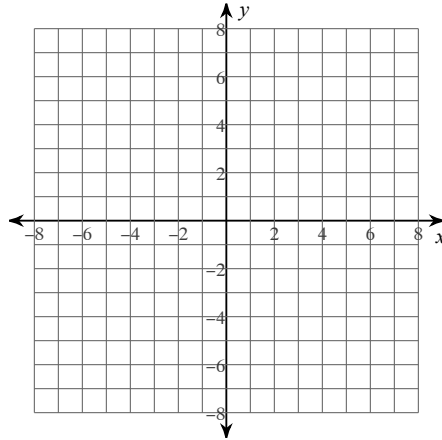
4) $y = -x^2 - 1$, $y = -2$
Axis: $y = -2$



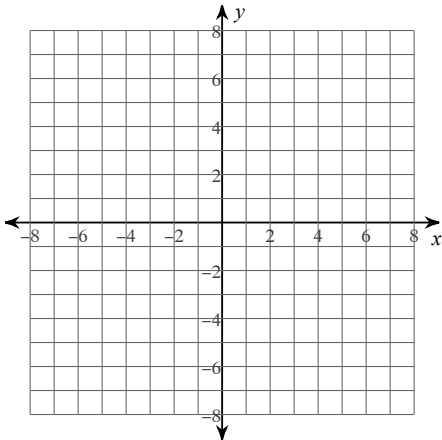
5) $x = \sqrt{y} - 1$, $x = -1$, $y = 4$
Axis: $x = -1$



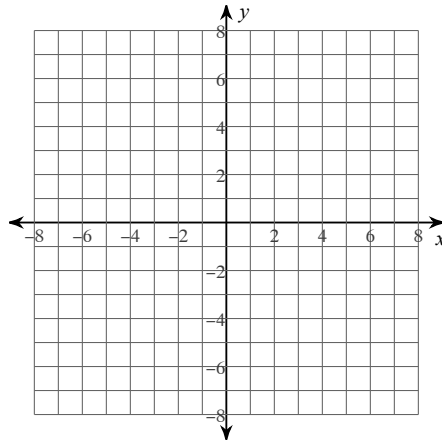
6) $x = -y^2 + 3$, $x = 2$, $y = 0$, $y = 1$
Axis: $x = 2$



7) $x = y^2 - 2$, $x = -2$, $y = 2$
Axis: $x = -2$



8) $x = -y^2 + 6$, $x = 2$
Axis: $x = 2$



Answers to Volume DISC Method Practice (ID: 1)

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

$$\begin{aligned} 2) \pi \int_0^2 (-x^2 + 4)^2 dx \\ = \frac{256}{15}\pi \approx 53.617 \end{aligned}$$

$$\begin{aligned} 3) \pi \int_{-2}^2 (-x^2 + 4)^2 dx \\ = \frac{512}{15}\pi \approx 107.233 \end{aligned}$$

$$\begin{aligned} 4) \pi \int_{-1}^1 (-x^2 + 1)^2 dx \\ = \frac{16}{15}\pi \approx 3.351 \end{aligned}$$

$$\begin{aligned} 5) \pi \int_0^4 (\sqrt{y})^2 dy \\ = 8\pi \approx 25.133 \end{aligned}$$

$$\begin{aligned} 6) \pi \int_0^1 (-y^2 + 1)^2 dy \\ = \frac{8}{15}\pi \approx 1.676 \end{aligned}$$

$$\begin{aligned} 7) \pi \int_0^2 (y^2)^2 dy \\ = \frac{32}{5}\pi \approx 20.106 \end{aligned}$$

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