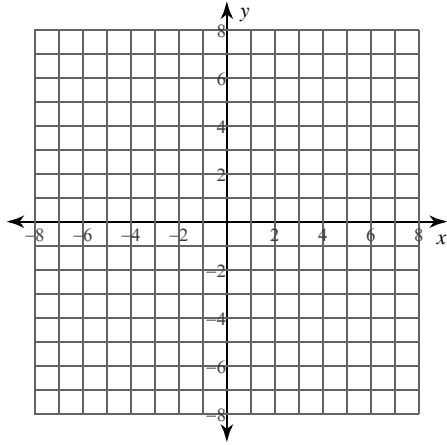


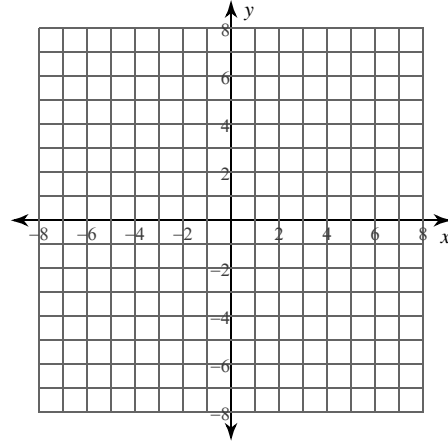
Calculus Practice: Using Definite Integrals to Calculate Volume 5b

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

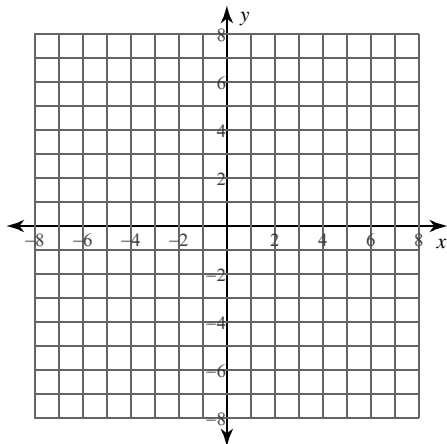
1) $y = -x^2 + 8$, $y = x^2$



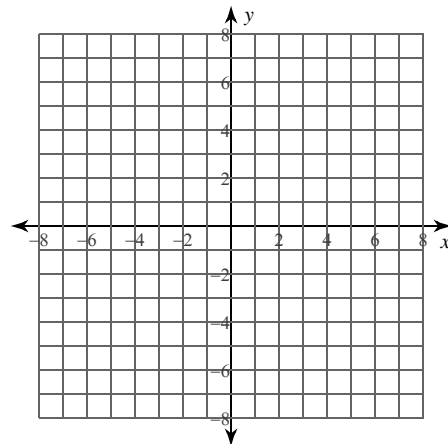
2) $y = \sqrt{x} + 4$, $y = 4$, $x = 4$



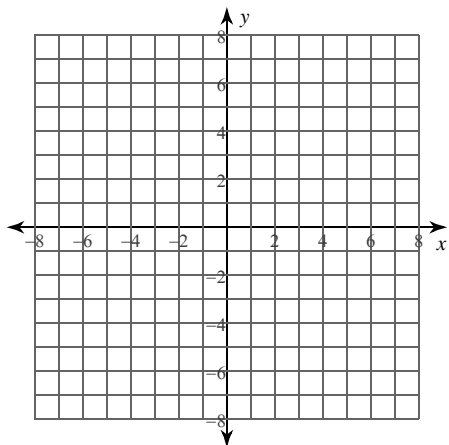
3) $y = -x^2 + 5$, $y = -x + 3$



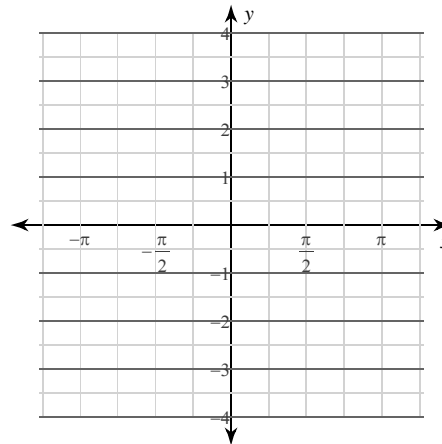
4) $y = \sqrt{x} + 2$, $y = x^2 + 2$



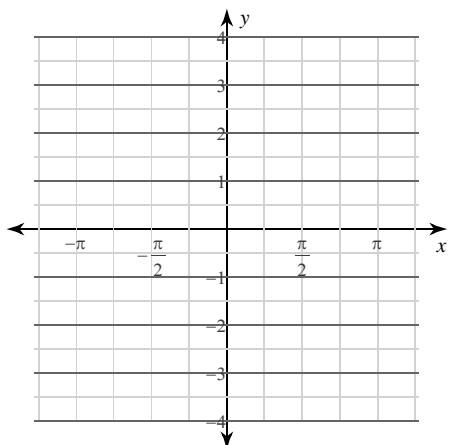
5) $y = 1, y = \sqrt[3]{x}, x = 0$



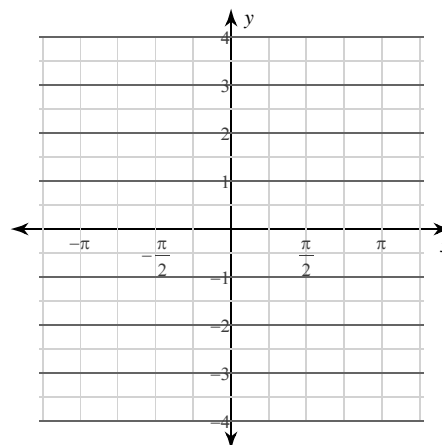
6) $y = 2\csc x, y = \csc x, x = \frac{\pi}{6}, x = \frac{\pi}{2}$



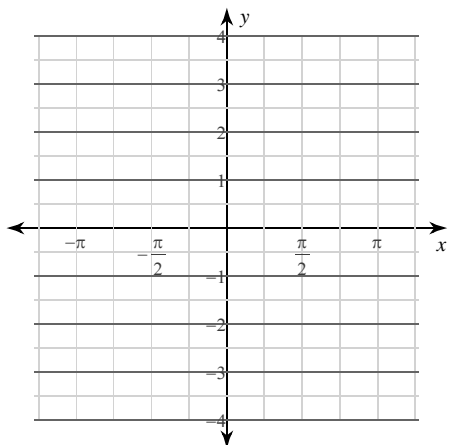
7) $y = 2\sec x, y = \sec x, x = -\frac{\pi}{6}, x = 0$



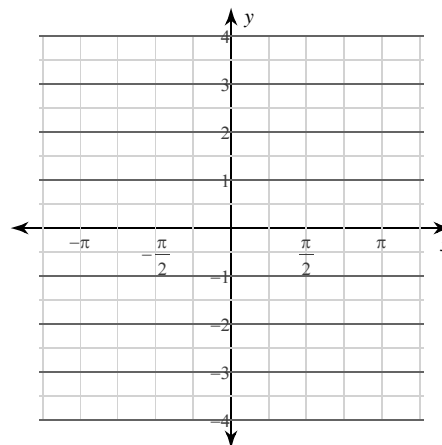
8) $y = 2\csc x, y = \csc x, x = \frac{\pi}{6}, x = \frac{2\pi}{3}$



9) $y = 2\sqrt{\cos x}, y = \sqrt{\cos x}, x = 0, x = \frac{\pi}{3}$



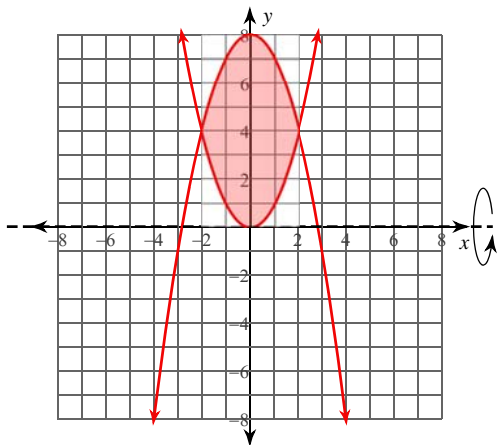
10) $y = 2\sec x, y = \sec x, x = 0, x = \frac{\pi}{3}$



Calculus Practice: Using Definite Integrals to Calculate Volume 5b

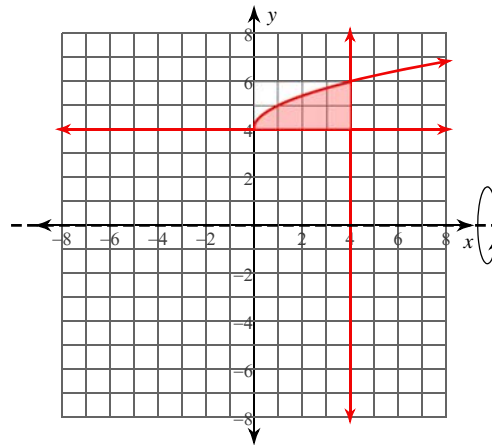
For each problem, find the volume of the solid that results when the region enclosed by the curves is revolved about the x -axis. You may use the provided graph to sketch the curves and shade the enclosed region.

1) $y = -x^2 + 8$, $y = x^2$



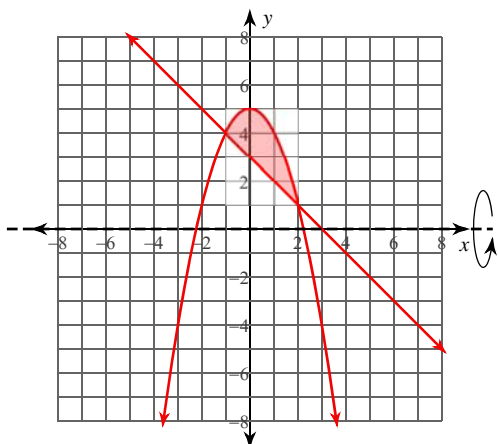
$\frac{512}{3}\pi \approx 536.165$

2) $y = \sqrt{x} + 4$, $y = 4$, $x = 4$



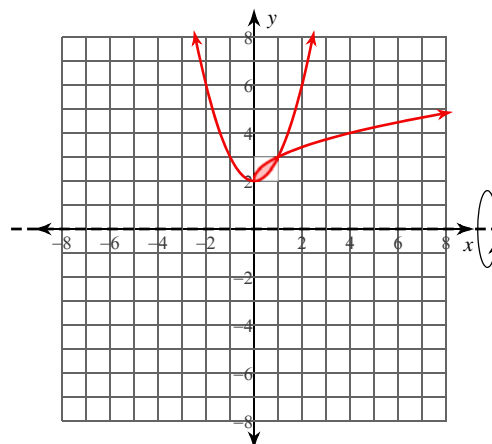
$\frac{152}{3}\pi \approx 159.174$

3) $y = -x^2 + 5$, $y = -x + 3$



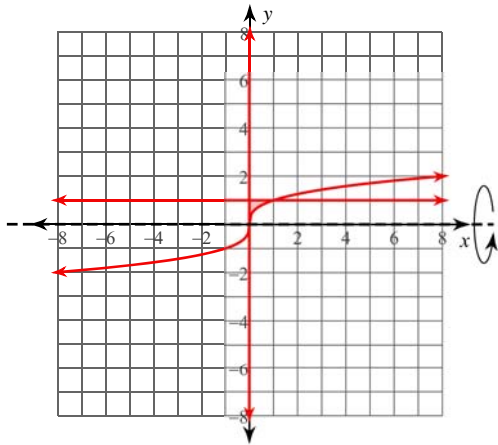
$\frac{153}{5}\pi \approx 96.133$

4) $y = \sqrt{x} + 2$, $y = x^2 + 2$



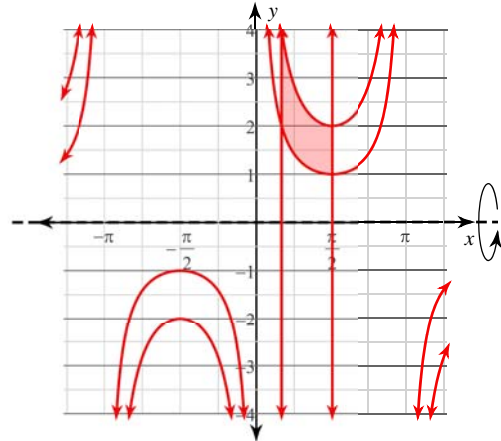
$\frac{49}{30}\pi \approx 5.131$

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



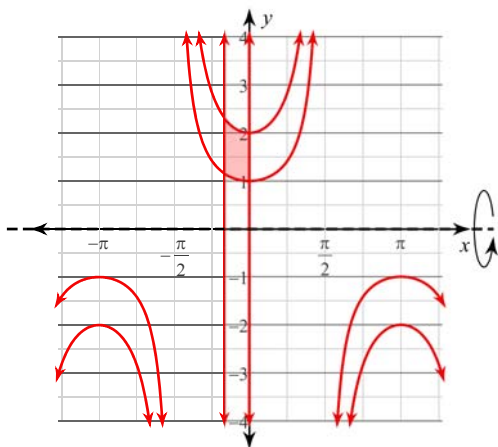
$\frac{2}{5}\pi \approx 1.257$

6) $y = 2\csc x$, $y = \csc x$, $x = \frac{\pi}{6}$, $x = \frac{\pi}{2}$



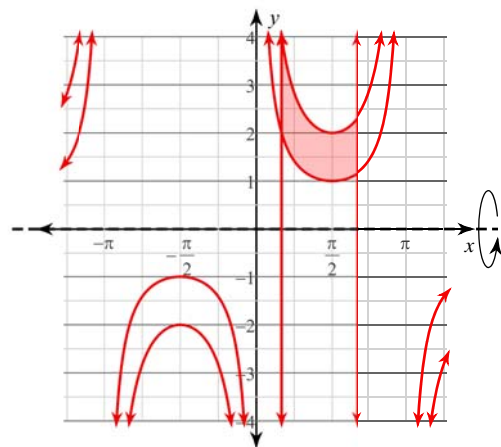
$3\sqrt{3} \cdot \pi \approx 16.324$

7) $y = 2\sec x$, $y = \sec x$, $x = -\frac{\pi}{6}$, $x = 0$



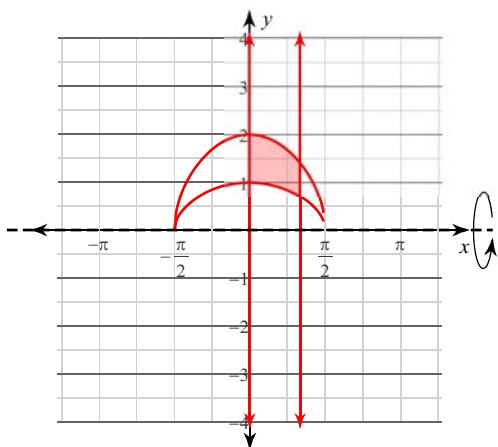
$\sqrt{3} \cdot \pi \approx 5.441$

8) $y = 2\csc x$, $y = \csc x$, $x = \frac{\pi}{6}$, $x = \frac{2\pi}{3}$



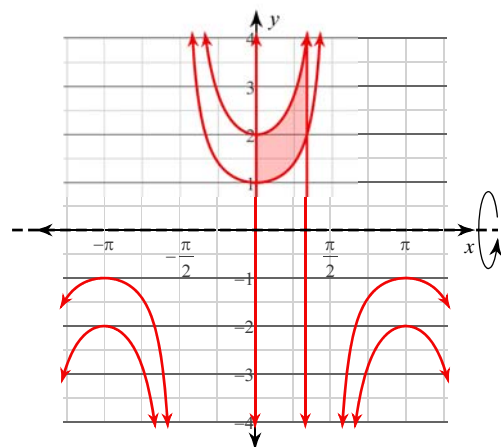
$4\sqrt{3} \cdot \pi \approx 21.766$

9) $y = 2\sqrt{\cos x}$, $y = \sqrt{\cos x}$, $x = 0$, $x = \frac{\pi}{3}$



$\frac{3\sqrt{3}}{2}\pi \approx 8.162$

10) $y = 2\sec x$, $y = \sec x$, $x = 0$, $x = \frac{\pi}{3}$



$3\sqrt{3} \cdot \pi \approx 16.324$