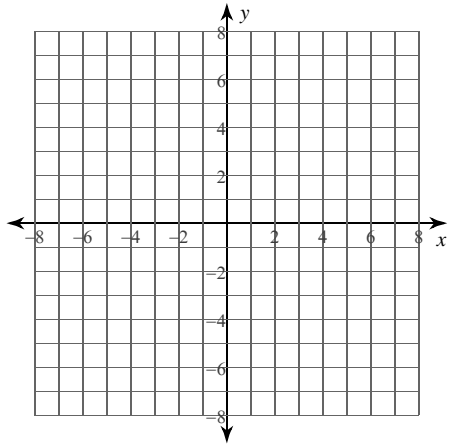


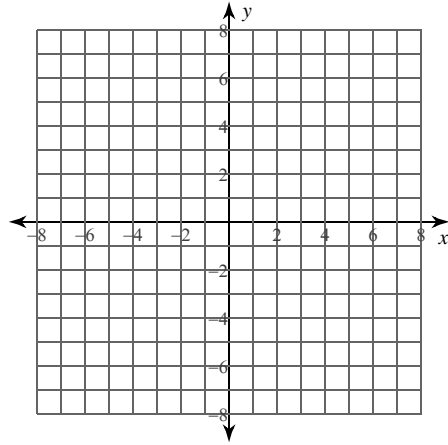
Calculus Practice: Using Definite Integrals to Calculate Volume 4b

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

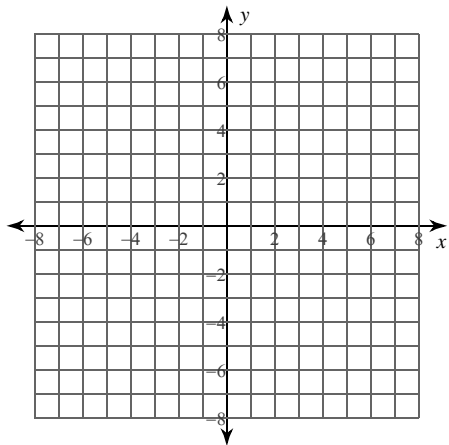
1) $x = 4$, $x = (y + 1)^2$, $y = -1$, $y = 1$
 Axis: $y = -1$



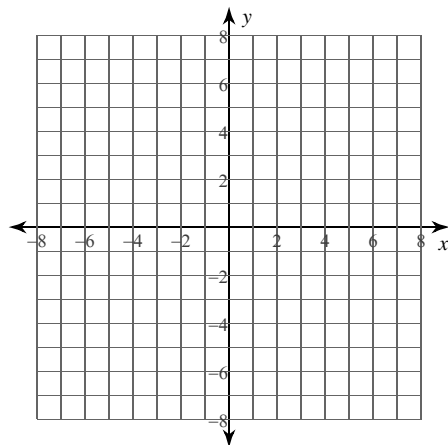
2) $x = \sqrt{4 - y}$, $x = -\sqrt{4 - y}$, $y = 0$
 Axis: $y = 0$



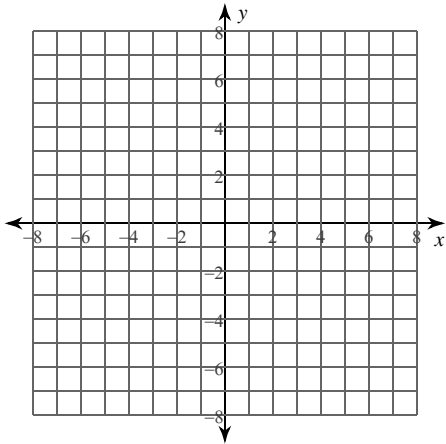
3) $x = \sqrt{1 - y}$, $x = -\sqrt{1 - y}$, $y = 0$
 Axis: $y = 0$



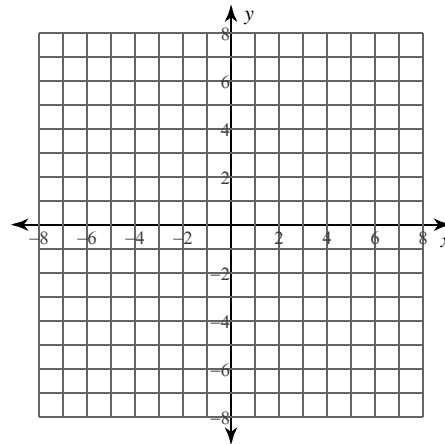
4) $x = 1$, $x = (y + 1)^2$, $y = -1$, $y = 0$
 Axis: $y = -1$



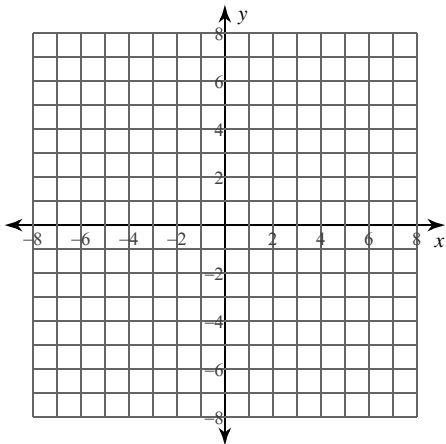
5) $y = 1, y = \sqrt[3]{x}, x = 0$
 Axis: $x = 0$



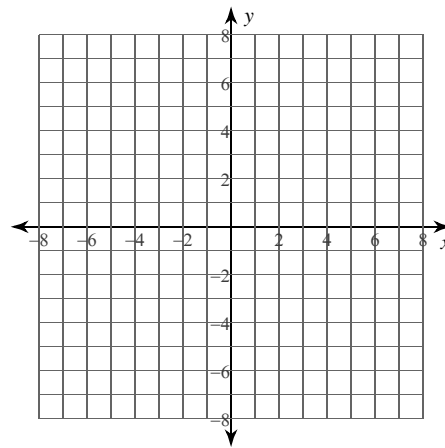
6) $y = 4, y = x^2, x = 0, x = 2$
 Axis: $x = 0$



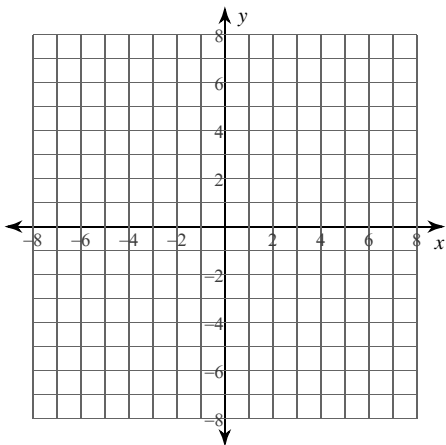
7) $y = 2, y = \sqrt{x}, x = 0$
 Axis: $x = 0$



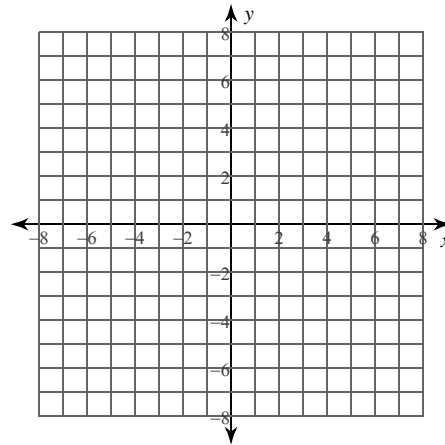
8) $x = \sqrt{1 - y}, x = 0, y = 0$
 Axis: $y = 0$



9) $y = \sqrt{4 - x}, y = -\sqrt{4 - x}, x = 0$
 Axis: $x = 0$



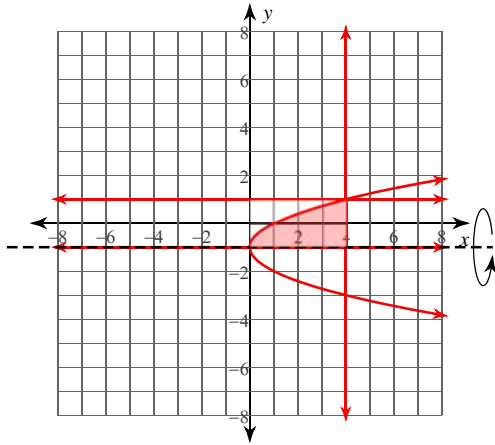
10) $x = 2, x = \sqrt{y - 1}, y = 1$
 Axis: $y = 1$



Calculus Practice: Using Definite Integrals to Calculate Volume 4b

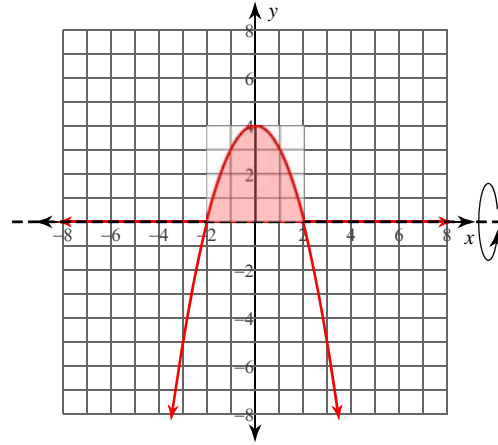
For each problem, find the volume of the solid that results when the region enclosed by the curves is revolved about the given axis. You may use the provided graph to sketch the curves and shade the enclosed region.

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



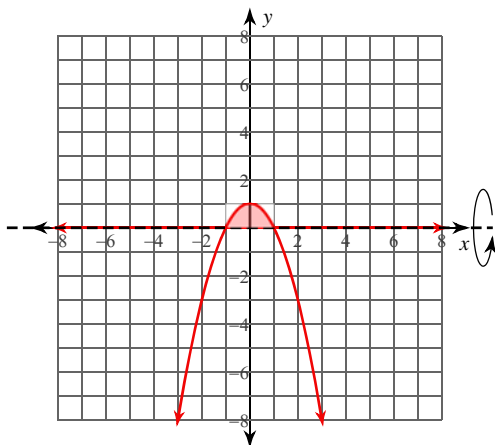
$8\pi \approx 25.133$

- 2) $x = \sqrt{4 - y}$, $x = -\sqrt{4 - y}$, $y = 0$
Axis: $y = 0$



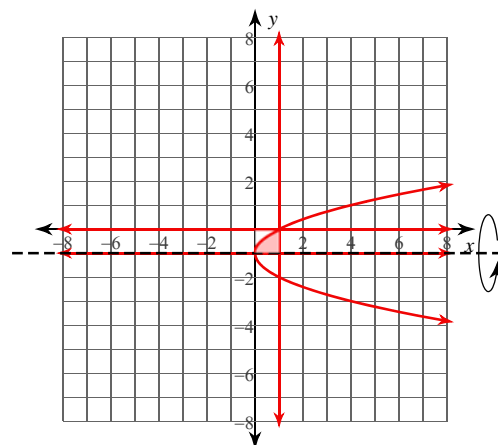
$\frac{512}{15}\pi \approx 107.233$

- 3) $x = \sqrt{1 - y}$, $x = -\sqrt{1 - y}$, $y = 0$
Axis: $y = 0$



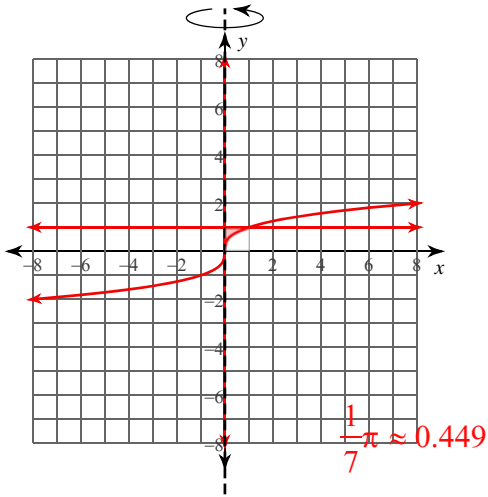
$\frac{16}{15}\pi \approx 3.351$

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

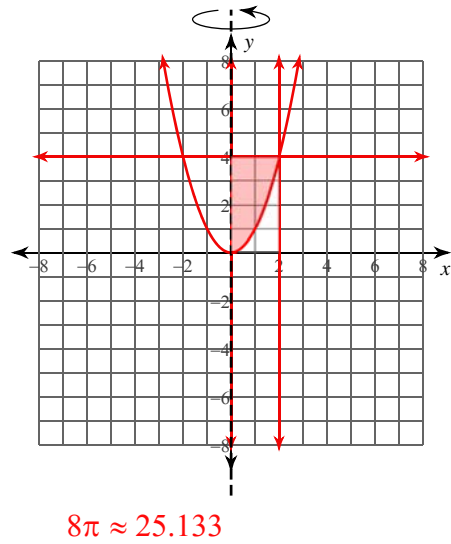


$\frac{1}{2}\pi \approx 1.571$

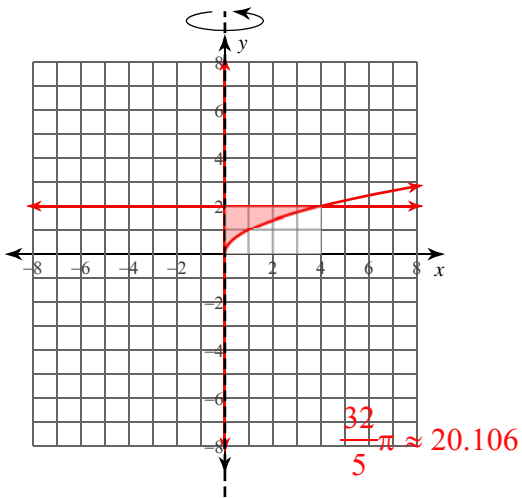
5) $y = 1, y = \sqrt[3]{x}, x = 0$
Axis: $x = 0$



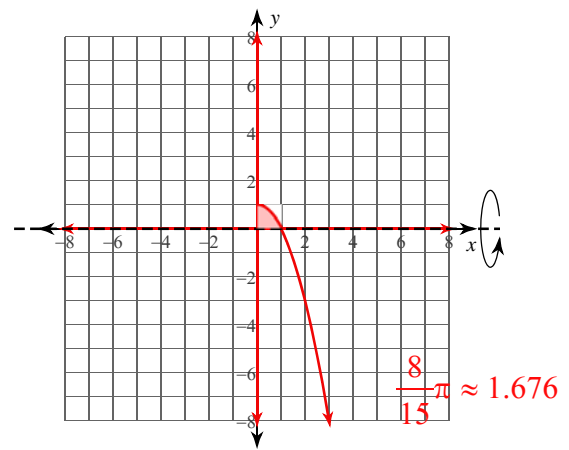
6) $y = 4, y = x^2, x = 0, x = 2$
Axis: $x = 0$



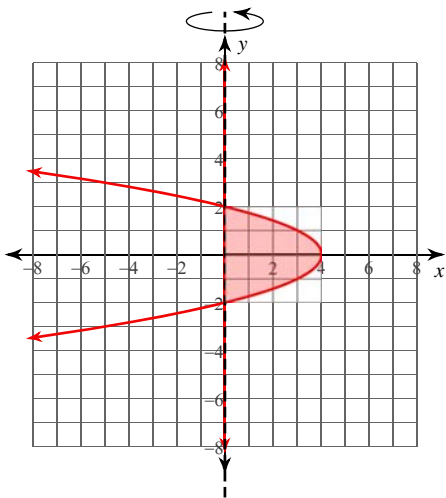
7) $y = 2, y = \sqrt{x}, x = 0$
Axis: $x = 0$



8) $x = \sqrt{1-y}, x = 0, y = 0$
Axis: $y = 0$



9) $y = \sqrt{4-x}, y = -\sqrt{4-x}, x = 0$
Axis: $x = 0$



10) $x = 2, x = \sqrt{y-1}, y = 1$
Axis: $y = 1$

