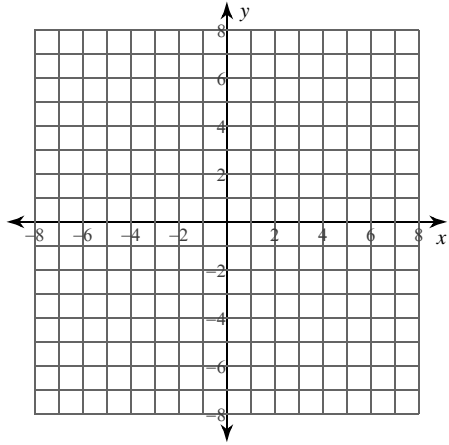


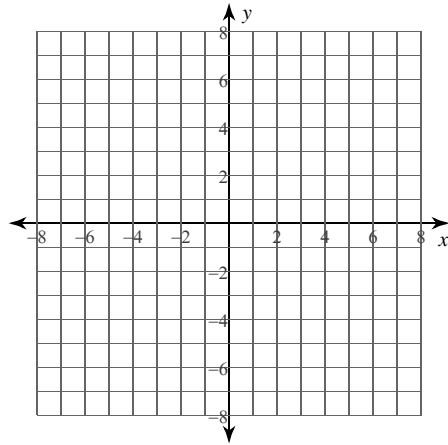
Calculus Practice: Using Definite Integrals to Calculate Volume 3b

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.

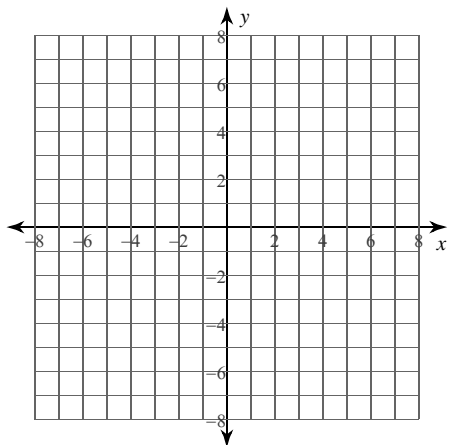
1) $y = \sqrt{x} - 1$, $y = -1$, $x = 1$
 Axis: $y = -1$



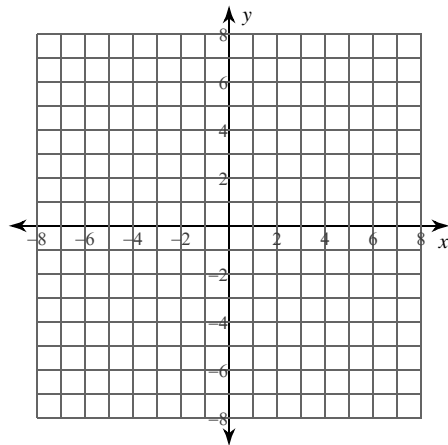
2) $y = -x^2 + 2$, $y = 1$, $x = 0$, $x = 1$
 Axis: $y = 1$



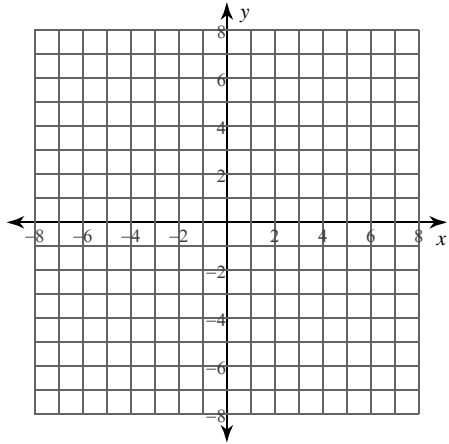
3) $y = -x^2 + 2$, $y = -2$
 Axis: $y = -2$



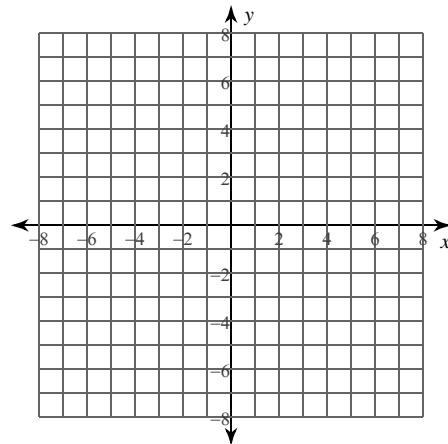
4) $y = \sqrt{x} + 1$, $y = 1$, $x = 4$
 Axis: $y = 1$



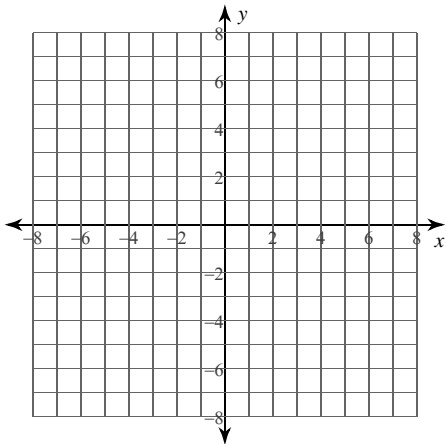
5) $y = x^2 - 1$, $y = -1$, $x = 1$
Axis: $y = -1$



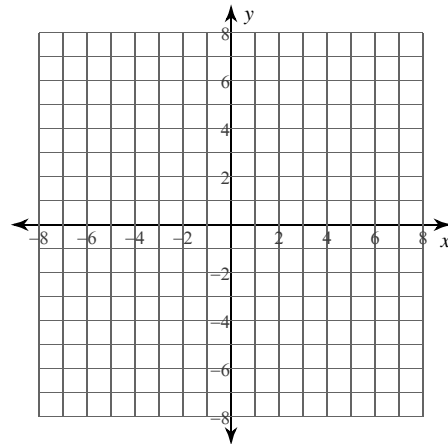
6) $x = \sqrt{y} - 2$, $x = -2$, $y = 4$
Axis: $x = -2$



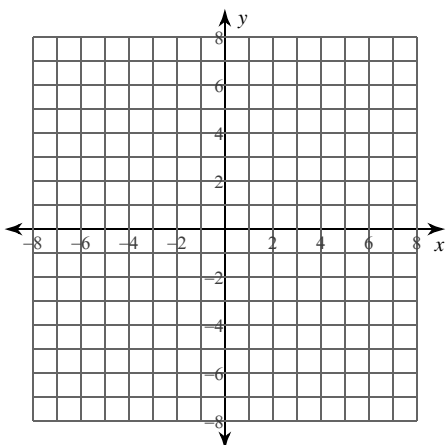
7) $x = y^2 + 2$, $x = -1$, $y = -1$, $y = 2$
Axis: $x = -1$



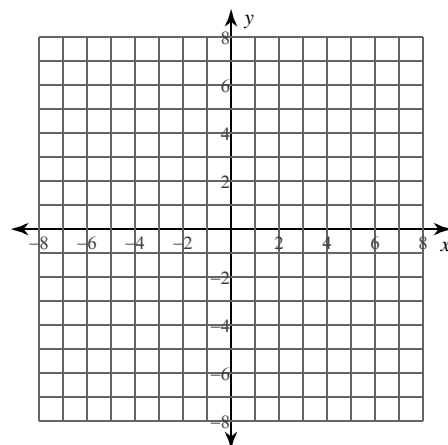
8) $x = -y^2 - 1$, $x = -2$
Axis: $x = -2$



9) $x = y^2 + 1$, $x = 1$, $y = 1$
Axis: $x = 1$



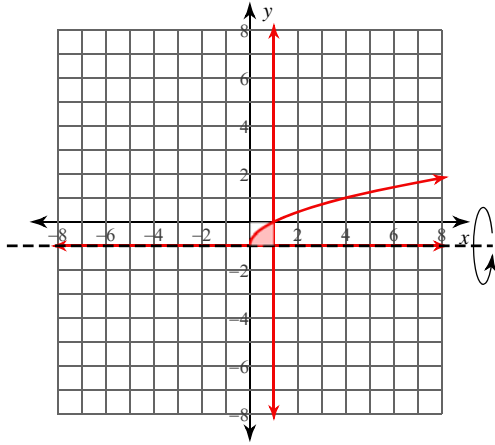
10) $x = -y^2$, $x = -1$, $y = -1$, $y = 0$
Axis: $x = -1$



Calculus Practice: Using Definite Integrals to Calculate Volume 3b

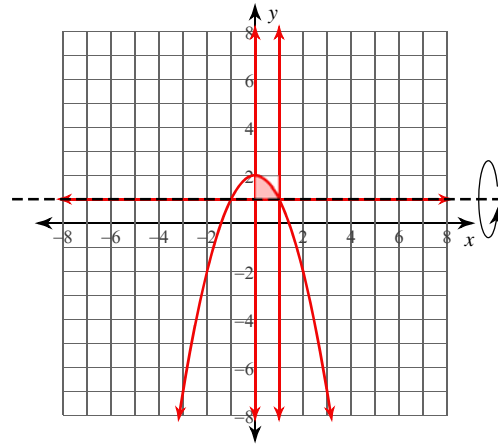
For each problem, find the volume of the solid that results when the region enclosed by the curves is revolved about the given axis. You may use the provided graph to sketch the curves and shade the enclosed region.

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



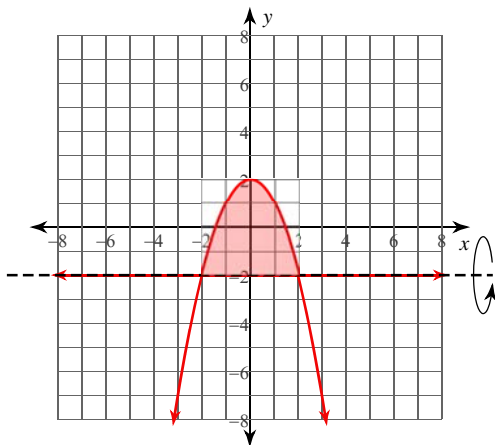
$\frac{1}{2}\pi \approx 1.571$

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



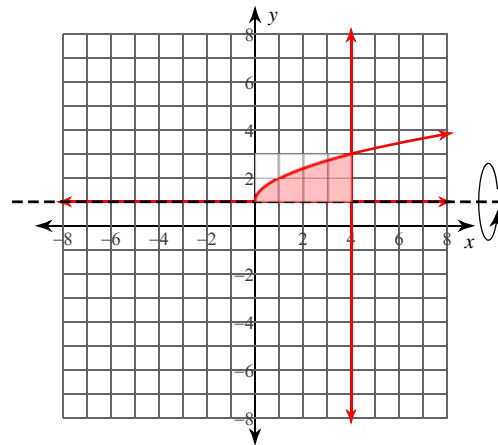
$\frac{8}{15}\pi \approx 1.676$

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



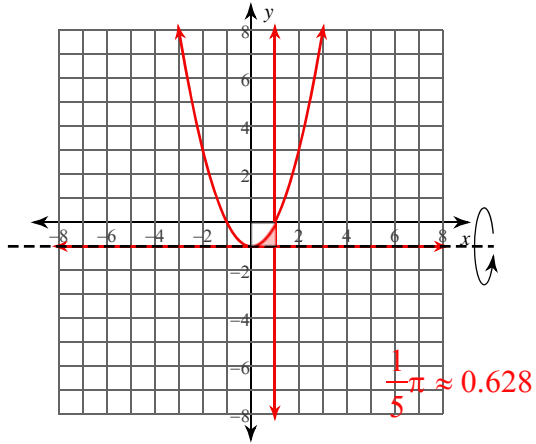
$\frac{512}{15}\pi \approx 107.233$

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

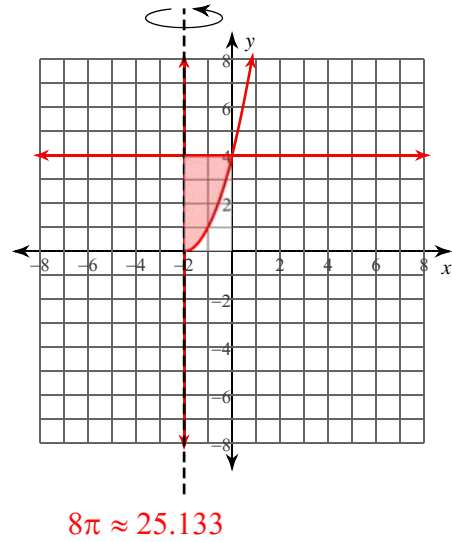


$8\pi \approx 25.133$

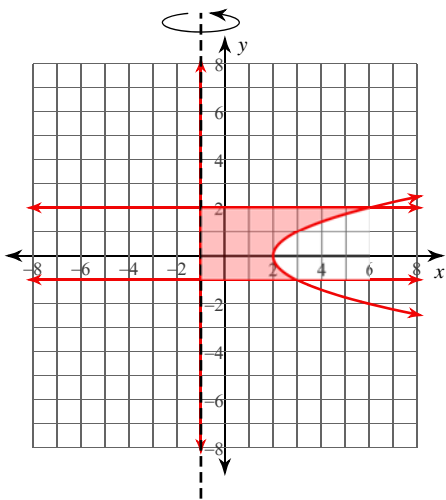
5) $y = x^2 - 1$, $y = -1$, $x = 1$
 Axis: $y = -1$



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

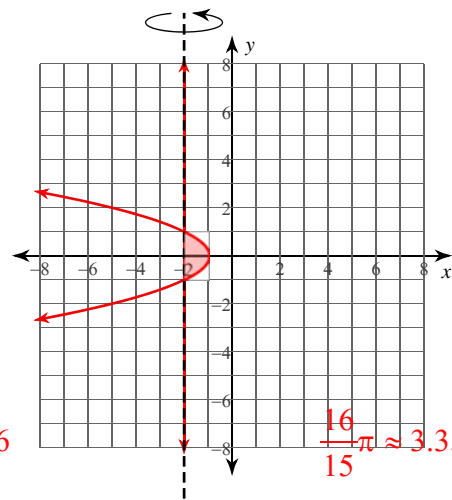


7) $x = y^2 + 2$, $x = -1$, $y = -1$, $y = 2$
 Axis: $x = -1$



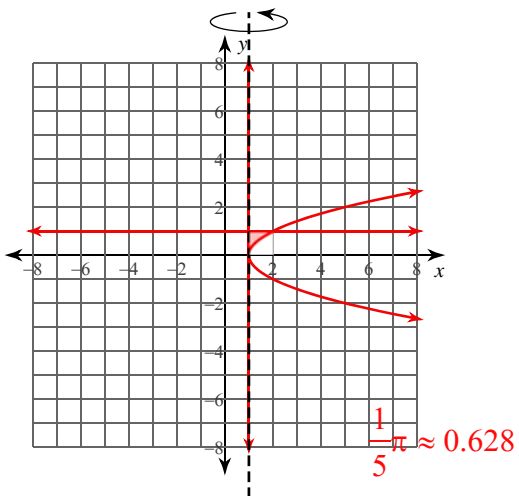
$\frac{258}{5}\pi \approx 162.106$

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

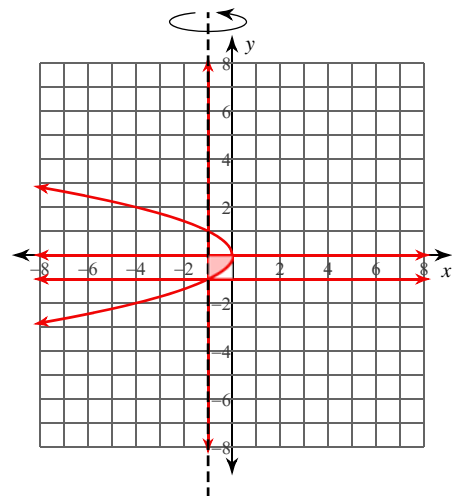


$\frac{16}{15}\pi \approx 3.351$

9) $x = y^2 + 1$, $x = 1$, $y = 1$
 Axis: $x = 1$



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



$\frac{8}{15}\pi \approx 1.676$