Area Between Curves – Find the area of the region R bounded by the graphs of $y = x^3$, $y = x + 6$, and the x-axis.

The Disk Method – Let R be the region bounded by the curve $f(x) = (x + 1)^2$, the x-axis, and the lines $x = 0$ and $x = 2$. Find the volume of the solid of revolution obtained by revolving R about the x-axis.

The Washer Method – The region R is bounded by the graphs of $f(x) = \sqrt{x}$ and $g(x) = x^2$ between $x = 0$ and $x = 1$. What is the volume of the solid that results when R is revolved about the x-axis?

The Shell Method – A cylindrical hole with radius r is drilled symmetrically through the center of a sphere with radius a, where $0 \leq r \leq a$. What is the volume of the remaining material?

Volume by Which Method? – The region R is bounded by the graphs of $f(x) = 2x - x^2$ and $g(x) = x$ on the interval $[0,1]$. Use the washer method and the shell method to find the volume of the solid formed when R is revolved about the x-axis.