MATH 221: CALCULUS I
VOLUMES WORKSHEET
NOVEMBER 22, 2013

5. Let $\mathbf{R}$ be the finite region bounded by the graphs of $x = y^2$ and $x = 3y$. Compute the volume of the solid obtained when $\mathbf{R}$ is revolved around the specified line. You should solve each problem two ways – once by integrating with respect to x and once by integrating with respect to y.

1. Revolve $\mathbf{R}$ around $x = 0$ (the y-axis).
2. Revolve $\mathbf{R}$ around $x = -2$.
3. Revolve $\mathbf{R}$ around $x = 10$.
4. Revolve $\mathbf{R}$ around $y = 0$ (the x-axis).
5. Revolve $\mathbf{R}$ around $y = -1$.
6. Revolve $\mathbf{R}$ around $y = 5$.