Problem Set 1 **Calc 2** **Due 2/22/19**

You are encouraged to work in groups of two to four on this assignment and make a single group submission. Each problem is worth 5 points. For full credit indicate clearly how you reached your answer

1. Use an integral to find the volume of a cap with height h of a sphere with radius r, as pictured in §7.2 #33.
2. Use an integral to find the volume of the napkin ring from §7.3 #42
3. Consider the region below $y = \frac{1}{x}$, above the x-axis, and to the right of $x = 1$. Use an integral to find the volume of the solid obtained by rotating this region around the x-axis.
4. Consider the region below $y = \frac{1}{x}$, above the x-axis, and to the right of $x = 1$. Use an integral to find the surface area of the solid obtained by rotating this region around the x-axis.