

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 right circular cone with base of radius r and height h
2. Use an integral to find the surface area of a right circular cone with base of radius r and height h
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.