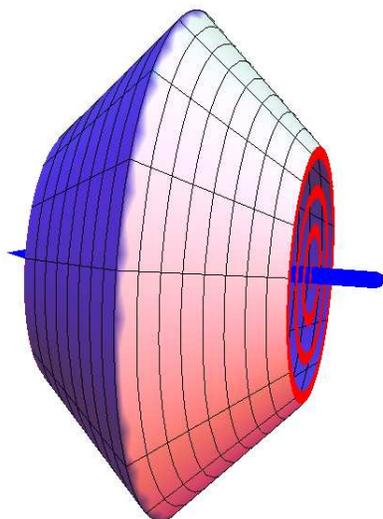


Lecture 22: Worksheet

Volume Computation

- 1 Find the volume of the solid that is formed by rotating the graph of $y = 3x^2$ around the x -axis, for $1 \leq x \leq 2$.
- 2 Find the volume of the solid that is formed by rotating the graph of $y = x^2$ around the y -axis, for $1 \leq y \leq 3$.
- 3 Derive the formula for the volume of a sphere ($\frac{4}{3}\pi r^3$).
- 4 Find the volume of the solid of revolution for which the radius at height z is $2 - |z|$ and $-1 \leq z \leq 1$.



- 5 The solid of revolution for which the radius at position x is $x^4 + 1$ and $x \in [-2, 2]$ is taken only above the xy plane as in the picture. Find the volume.

