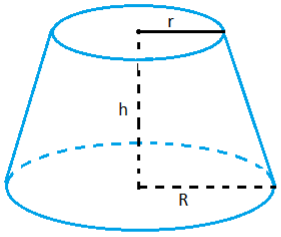
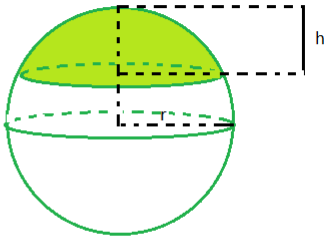
1. Compute the area of the region enclosed by $y = e^x$, $y = x^2 - 1$, $x = -1$ and $x = 1$.
2. Compute the area of the the region enclosed by $y = |x|$ and $y = x^2 - 2$.
3. Compute the volume of a frustum of a right circular cone with height h, lower base radius R and top radius r.
4. Compute the volume of the cap of a sphere with radius r and height h.



Question 3



Question 4

5. Find the volume of the solid obtained by rotating the region bounded by $y = 1 - x^2$ and $y = 0$ about x-axis.
6. The region enclosed by $x = y^2$, $x = 1$ on the xy-plane is rotated about $x = 1$ to form a solid. Find the volume of the solid.
7. Use the cylindrical shells to find the volume of the solid obtained by rotating the region bounded by $y = e^{-x^2}$, $y = 0$, $x = 0$, $x = 1$ about the y-axis.
8. Use the cylindrical shells to find the volume of the solid obtained by rotating the region bounded by $y = x^2$, $y = 2 - x^2$ about $x = 1$.