Firot Momente: Centroides \& Centers of gravity
Sires monent of a quartity with reepectito an axiz= mowent arm of the quanity with respect to that axis multuplied by that quantity
Principle of vimento $(P O M)$ :
POM]: Reerultant $=$ sunos the components
POM2: Mroment of the recultant
= Cum of monents of the components

pet theorem of Pappue-Guldinus: $A=\theta \bar{y} L$

$2^{\text {nd }}$ pheorem of pappuz-guldinue: $V=\theta \bar{y} A$


$$
\begin{gathered}
\frac{4}{3} \pi r^{3}=2 \pi \bar{y} \cdot \frac{\pi r^{2}}{2} \\
\bar{y}=\frac{4 \pi r^{3}}{3\left(\pi^{2} p^{2}\right)}=\frac{4 r}{3 \pi} \\
\bar{y}=\frac{4 r}{3 \pi}
\end{gathered}
$$

