

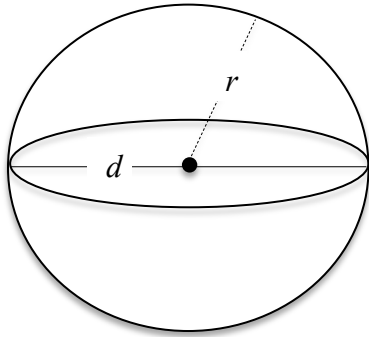
### Volume of a Sphere:

$$V = \frac{4}{3}\pi r^3$$

Diameter ( $d$ ) of a Ping Pong Ball is  $40\text{mm}^3$

$d/2 = \text{radius } (r) \rightarrow 40\text{mm}/2 = 20\text{mm } r$

Plug in volume formula  $\rightarrow V = \frac{4}{3}\pi(20)^3 \rightarrow 33,510.24\text{mm}^3 (2.045\text{in}^3)$



### Volume of a Cylinder:

$$V = \pi r^2 h$$

$$\pi * 10^2 * 225 = 70,685\text{ft}^3$$

Packing distance of .56 needs to be applied to account for the gaps between the Ping Pong balls

$$70,685\text{ft}^3 / 2\text{in}^3 = 61,072,424\text{ft}^3 * .56 = 34,200,557 \text{ Ping}$$

**Pong Balls**

