

Volume of a Sphere

$$h = 2r$$

$$\begin{aligned} V_{\text{cylinder}} &= \pi r^2 h \\ &= \pi r^2 (2r) \\ &= 2\pi r^3 \end{aligned}$$

Conclusion:

The Sphere fills 2/3 of the cylinder of the same size.

So, sphere is 2/3 of the volume of the cylinder.

$$\begin{aligned} V_{\text{sphere}} &= \frac{2}{3} V_{\text{cylinder}} \\ &= \frac{2}{3} (2\pi r^3) \\ &= \frac{4}{3} \pi r^3 \end{aligned}$$

Volume of a Sphere: $V = \frac{4\pi r^3}{3}$ or $V = \frac{4}{3} \pi r^3$

Example 1) An orange is approximately spherical. What is the volume of an orange with a diameter of 10cm?



Example 2) A mens' basket ball has a circumference of 29.5 inches. What is its volume?



Example 3) A womens' basket ball has a circumference of 28.5 inches. What is its volume?

Example 4) Find the volume of the ice cream cone



Practice pg 35 #1, 3a, 4a, 5, 7 complete for homework.