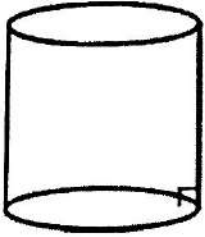


Volume of a Cylinder:  $V = \pi r^2 h$



1. Farmer Jones owns a citrus tree farm in Florida. During some parts of the year the amount of rain in Florida is not sufficient to maintain maximum growth of citrus so farmer Jones is going to buy a water tank. Find how much water it will hold if it is a right circular cylinder with a height of 10 feet and a radius of radius of 5 feet.

$$V = \pi \cdot (5)^2 \cdot 10$$

$$V = 250\pi \text{ ft}^3 \text{ (Exact Value)}$$

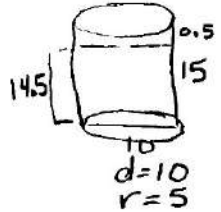
$$V \approx 785 \text{ ft}^3 \text{ (Approx. Value)}$$

2. A soup can has a diameter of 10 cm and a height of 15 cm. What is the volume of the soup in the can if 0.5 cm of space is left at the top of the can to allow for expansion?

$$V = \pi (5)^2 \cdot 14.5$$

$$V = \frac{725}{2} \pi \text{ cm}^3$$

$$V \approx 1138.25$$



$$\begin{array}{r} h = 15 \\ - 0.5 \\ \hline h = 14.5 \end{array}$$

Volume of a Cone:  $V = \frac{1}{3}Bh$  or  $\frac{\pi r^2 h}{3}$

3. What is the volume of a cone with a base radius of 9 in. and a height of 5 in.?

$$V = \frac{\pi (9)^2 \cdot 5}{3}$$

$$V \approx 423.9 \text{ in}^3$$

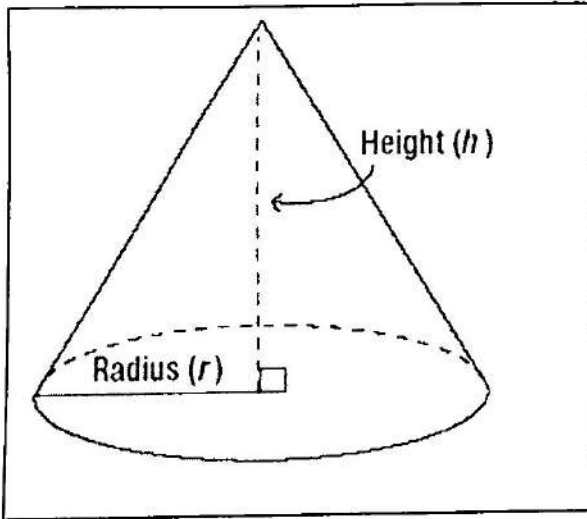
$$V = 135\pi \text{ in}^3$$

4. A model of a volcano constructed for a science project is cone-shaped with a diameter of 8 inches. If the height of the model is 20 inches, what is the volume of the volcano model?

$$V = \frac{\pi \cdot 4^2 \cdot 20}{3}$$

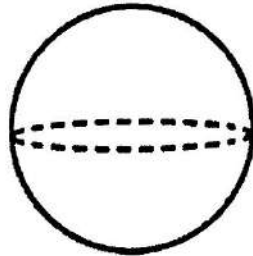
$$V \approx 334.9 \text{ in}^3$$

$$V = \frac{320}{3} \pi \text{ in}^3$$



Volume of a Sphere:

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



5. A sphere has a diameter of 8 feet. What is its volume?

$$V = \frac{256}{3} \pi \text{ ft}^3$$

$$V \approx 267.9 \text{ ft}^3$$

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

$$V = \frac{256}{3} \pi \text{ ft}^3$$

6. Find the volume of the earth assuming the earth to be a sphere with a radius of 6369 km.

$$V = \frac{4}{3} \cdot \pi \cdot (6369)^3 \approx 1.08 \times 10^{12} \text{ Km}^3$$

