

Do-now:

A cone has a slant height of 10 inches and the diameter of the base is 12 inches. What is the volume of the cone?



$$6^2 + h^2 = 10^2$$

$$36 + h^2 = 100$$

$$h^2 = 64$$

$$h = 8$$

$$V = \frac{1}{3} B h$$

$$V = \frac{1}{3} \pi r^2 h$$

$$V = \frac{1}{3} \pi \cdot 6^2 \cdot 8$$

$$V = \frac{1}{3} \pi \cdot 36 \cdot 8$$

$$V = \frac{1}{3} \pi \cdot 288$$

$$V = 96\pi \text{ in}^3$$

The volume of a cylinder is 925 cubic inches. If the height of the cylinder is 12 inches, what is the length of the radius? Round your answer to the nearest tenth of an inch.

$$V = Bh$$

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

$$\frac{925}{12} = \frac{\pi \cdot r^2 \cdot 12}{12}$$

$$\frac{77.083...}{\pi} = \frac{\pi r^2}{\pi}$$

$$\rightarrow 24.53... = r^2$$

$$4.953... = r$$

$$5.0 = r$$

The volume of a sphere is 972π cubic inches.
What is the length of the diameter of the sphere?

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

$$972\pi = \frac{4}{3}\pi r^3$$

$$\text{diameter} = 18$$

$$\sqrt[3]{\quad}$$

$$\frac{972}{\frac{4}{3}} = \frac{\frac{4}{3}r^3}{\frac{4}{3}}$$

$$\sqrt[3]{729} = \sqrt[3]{r^3}$$

$$9 = r$$

