

## 13 - 3 Volumes of Spheres

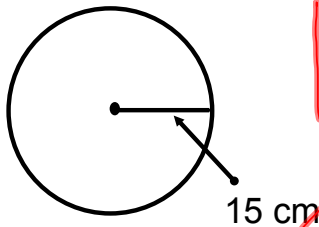
**Volume of Spheres:**

$$V = \left(\frac{4}{3}\right)\pi r^3$$

$r$  = radius

1. Find the volume of each sphere to the nearest tenth.

a.

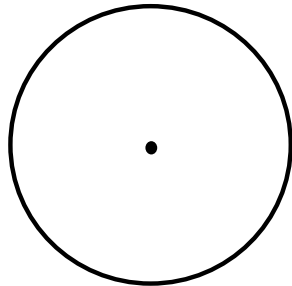


$$V = \left(\frac{4}{3}\right)\pi r^3$$

$$V = \left(\frac{4}{3}\right)\pi (15)^3$$

$$V = 14137.2 \text{ cm}^3$$

b.



$$C = 25 \text{ cm}$$

$$C = 2\pi r$$

$$\frac{25}{2\pi} = \frac{2\pi r}{2\pi}$$

$$3.97887 = r$$

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

$$V = \frac{4}{3}\pi (3.97887)^3$$

$$V = 263.9 \text{ cm}^3$$

$$25 / (2\pi)$$

2. Find the volume of a hemisphere with a diameter of 6 feet.

$$V = \left(\frac{4}{3}\right) \pi r^3$$

$$\left(\frac{4}{3}\right) \pi (3^3)$$

$$\frac{113.0973355}{2} = 56.5 \text{ ft}^3$$

3. Compare the volumes of the sphere and cylinder with the same radius and height as the radius of the sphere.

