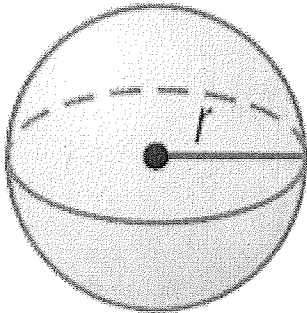


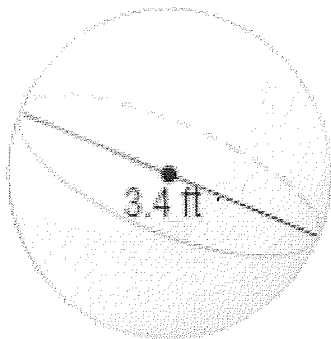
# Basic Surface Area and Volume of Spheres Notes



<u>Surface Area:</u> $4\pi r^2$	<u>Volume:</u> $V = \frac{4}{3}\pi r^3$
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Find the volume and surface area of the sphere. Round to the nearest tenth.

**Example 1:**



$$d = 3.4 \text{ ft}$$

$$r = 1.7 \text{ ft}$$

$$SA = 4\pi(1.7)^2$$

$$= 11.56\pi$$

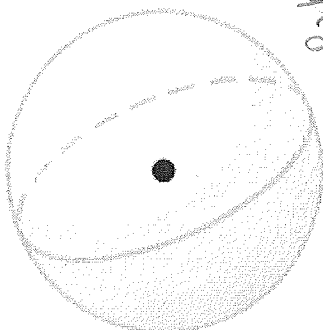
$$SA \approx 36.3 \text{ ft}^2$$

$$V = \frac{4}{3}\pi(1.7)^3$$

$$V = 20.6 \text{ ft}^3$$

**Example 2:**

$C = 24$  inches



$$\frac{24}{2\pi} = \frac{2\pi r}{2\pi}$$

$$r = 3.8 \text{ in}$$

$$SA = 4\pi(3.8)^2$$

$$= 57.76\pi$$

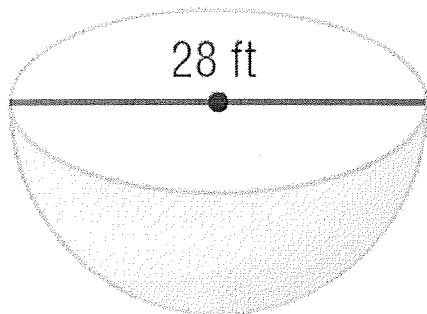
$$= 181.5 \text{ in}^2$$

$$V = \frac{4}{3}\pi(3.8)^3$$

$$= 229.8 \text{ in}^3$$

Find the volume and surface area of the solid or composite below.  
Round to the nearest tenth.

**Example 3:**



$$r = 14 \text{ ft}$$

semicircle

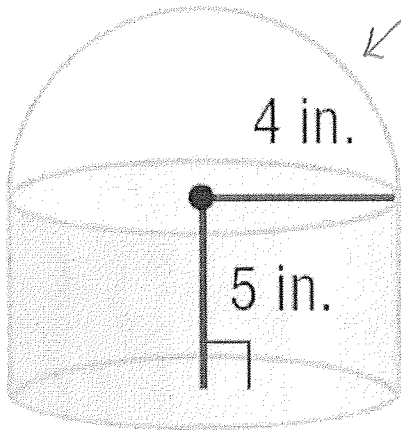
$$SA = \frac{1}{2} (4\pi (14)^2)$$

$$= 1231.5 \text{ ft}^2$$

$$V = \frac{1}{2} \left( \frac{4}{3} \pi (14)^3 \right)$$

$$= 410.5 \text{ ft}^3$$

**Example 4:**



$$SA = \frac{1}{2} \text{ sphere} + \text{cylinder}$$

$$= \frac{1}{2} (4\pi (4)^2) + \pi (4)^2 + 2\pi \cdot 4 \cdot 5$$

$$= 32\pi + 16\pi + 40\pi$$

$$= 276.5 \text{ in}^2$$

$$V = \frac{1}{2} \text{ sphere} + \text{cylinder}$$

$$= \frac{1}{2} \left( \frac{4}{3} \pi (4)^3 \right) + \pi (4)^2 (5)$$

$$= 42.6\pi + 80\pi$$

$$V \approx 3413.3 \text{ in}^3$$