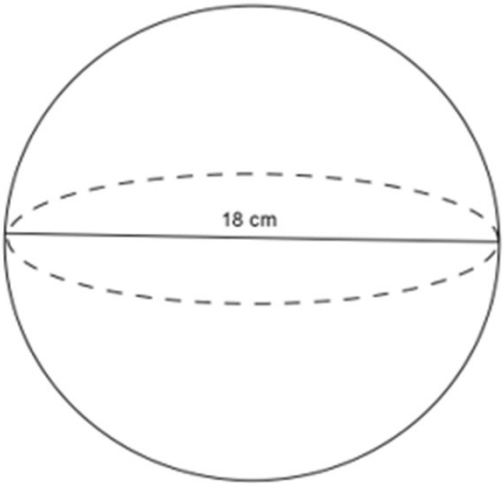
Volumes of Spheres

1. Use the diagram to find the volume of the sphere.



2. Determine the volume of a sphere with diameter $9\ mm$.

3. Determine the volume of a sphere with diameter $22\ in$.

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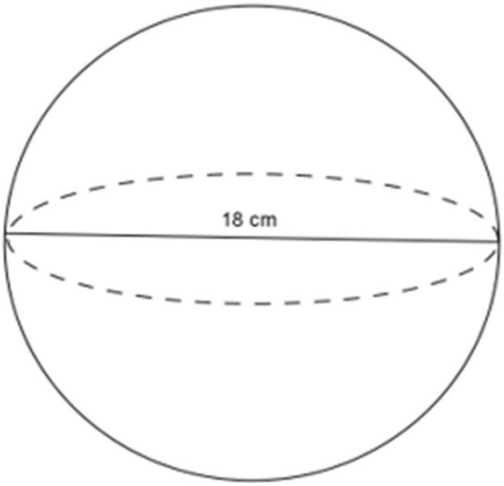

$$V = \frac{4}{3}\pi r^3$$

$$V = \frac{4}{3}\pi(9^3)$$

$$V = 972\pi$$

The volume of the sphere is $972\pi\ cm^3$.

2. Determine the volume of a sphere with diameter $9\ mm$.

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

$$= \frac{4}{3}\pi(4.5^3)$$

$$= \frac{364.5}{3}\pi$$

$$= 121.5\pi$$

The volume of the sphere is $121.5\pi\ mm^3$.

3. Determine the volume of a sphere with diameter $22\ in$.

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

$$= \frac{4}{3}\pi(11^3)$$

$$= \frac{5324}{3}\pi$$

$$= 1774\frac{2}{3}\pi$$

The volume of the sphere is $1774\ \frac{2}{3}\pi\ in^3$.