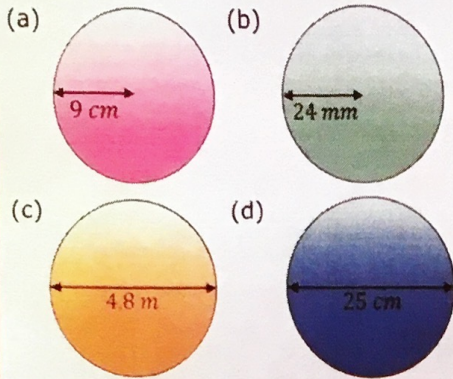


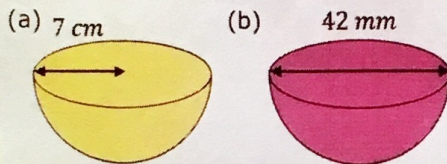
Volume and Surface Area of Spheres

Find the volume and surface area of these spheres.



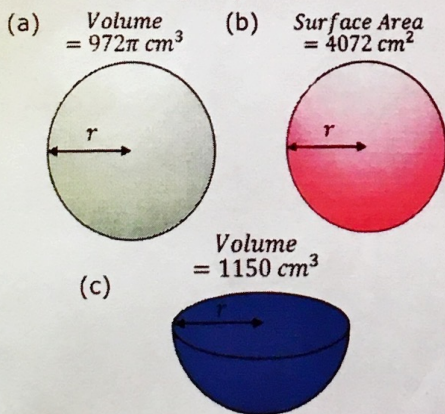
$$\begin{aligned} \text{(a)} \quad V &= 3054 \text{ cm}^3 & 972\pi \\ A &= 1018 \text{ cm}^2 & 324\pi \\ \text{(b)} \quad V &= 57906 \text{ mm}^3 & 18432\pi \\ A &= 7238 \text{ mm}^2 & 2304\pi \\ \text{(c)} \quad V &= 57.9 \text{ m}^3 \\ A &= 72.4 \text{ m}^2 \\ \text{(d)} \quad V &= 8181 \text{ cm}^3 & 2604\pi \\ A &= 1963.5 \text{ cm}^2 & 625\pi \end{aligned}$$

Find the volume and total surface area of these hemispheres.



$$\begin{aligned} \text{(a)} \quad V &= 718.4 \text{ cm}^3 \\ A &= 461.8 \text{ cm}^2 \\ \text{(b)} \quad V &= 19396 \text{ mm}^3 & 6174\pi \\ A &= 4156 \text{ mm}^2 & 147\pi \end{aligned}$$

Find the missing lengths.



$$\begin{aligned} \text{(a)} \quad r &= 9 \text{ cm} \\ \text{(b)} \quad r &= 18 \text{ cm} \\ \text{(c)} \quad r &= 8.19 \text{ cm} \end{aligned}$$

A container is made up of a hemisphere on top of a cylinder, both with the radius 26 cm. The total volume of the container is $230\,000 \text{ cm}^3$. Find the height of the cylinder.

$$\text{(a)} \quad 91 \text{ cm}$$