MATC9 Ch3.2 Key Concepts 2 Volume of a Sphere Worked Example

Example: A spherical beach ball has a radius of 24 cm. What volume of air does it hold?

Solution: The volume of a sphere is calculated using the formula $V = \frac{4}{3}\pi r^3$.

$$V = \frac{4}{3} \times \pi \times 24^3$$
$$= 57\,906 \text{ cm}^3$$

The volume of air held by the beach ball is 57 906 cm^3.

Practice:

1. A fuselage fuel tank for a jet fighter is a sphere of radius 35 cm. What volume of fuel will it hold?

2. A hot air balloon has a spherical shape with a radius of 7.2 m. What volume of air does it hold?

Answers: 1. 179 594 cm^3 2. 1563 m^3