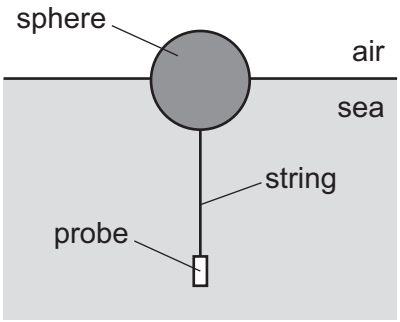
14 A probe is used to monitor the quality of the water in the sea. The probe is suspended by a vertical string which is attached to a sphere. The stationary sphere floats in equilibrium on the surface of the sea, as shown.



The sphere has a weight of 5.00 N. The probe and string have a combined weight of 2.00 N.

The density of the seawater is $1.03 \times 10^3\,\text{kg}\,\text{m}^{-3}$. The upthrust acting on the probe and thread is negligible.

What is the volume of the sphere below the surface of the sea?

A $1.98 \times 10^{-4}\,\text{m}^3$

B $2.97 \times 10^{-4}\,\text{m}^3$

C $4.95 \times 10^{-4}\,\text{m}^3$

D $6.93 \times 10^{-4}\,\text{m}^3$