**1** **(a)** Compare scalar and vector quantities.

.....

.....

..... [2]

**(b)** The radius of a small sphere is determined from a measurement of the volume of the sphere. The sphere is submerged in water, displacing some of the water into a measuring cylinder as shown in Fig. 1.1.

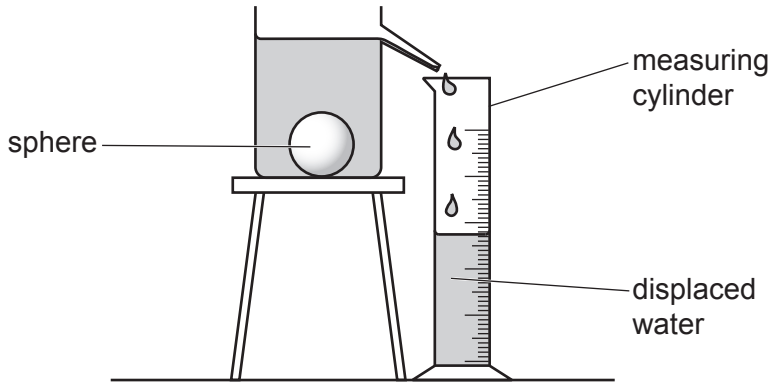


**Fig. 1.1** (not to scale)

The measured volume of displaced water is $(28.0 \pm 0.5)\,cm^3$.

Calculate:

**(i)** the radius, in cm, of the sphere

radius = ..... cm [1]

**(ii)** the percentage uncertainty in the radius of the sphere.

percentage uncertainty = ..... % [2]

[Total: 5]