2 A coin is made in the shape of a thin cylinder, as shown in Fig. 2.1.

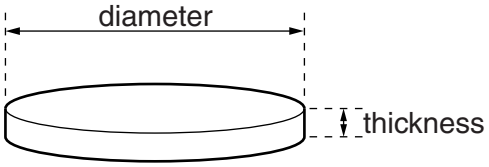

Fig. 2.1

Fig. 2.2 shows the measurements made in order to determine the density ρ of the material used to make the coin.

quantity	measurement	uncertainty
mass	9.6 g	± 0.5 g
thickness	2.00 mm	± 0.01 mm
diameter	22.1 mm	± 0.1 mm

Fig. 2.2

(a) Calculate the density ρ in kg m^{-3}.

ρ = ...kg m^{-3} [3]

(b) **(i)** Calculate the percentage uncertainty in ρ.

percentage uncertainty = ... [3]

(ii) State the value of ρ with its actual uncertainty.

ρ = ... ± ..... kg m^{-3} [1]