

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

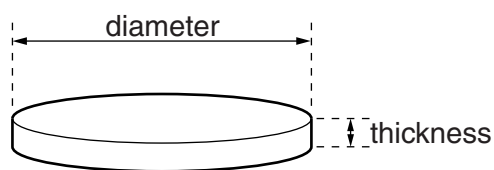


Fig. 2.1

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} .

$$\rho = \dots\dots\dots \text{kg m}^{-3} \quad [3]$$

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

$$\text{percentage uncertainty} = \dots\dots\dots [3]$$

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

$$\rho = \dots\dots\dots \pm \dots\dots\dots \text{kg m}^{-3} \quad [1]$$