

Answer **all** the questions in the spaces provided.

- 1 The uncalibrated scale and the pointer of a meter are shown in Fig. 1.1.

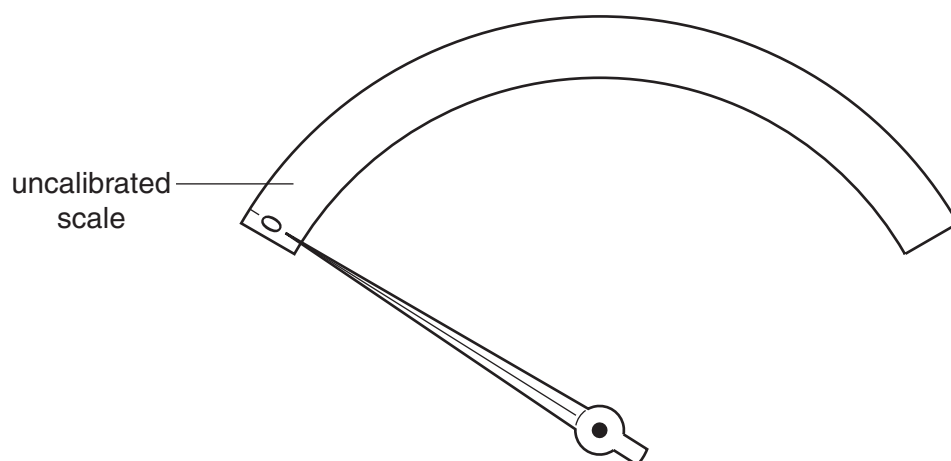


Fig. 1.1

The pointer is shown in the zero position.

The meter is to be used to indicate the volume of fuel in the tank of a car.

A known volume V of fuel is poured into the tank and the deflection θ of the pointer is noted.

Fig. 1.2 shows the variation with θ of V .

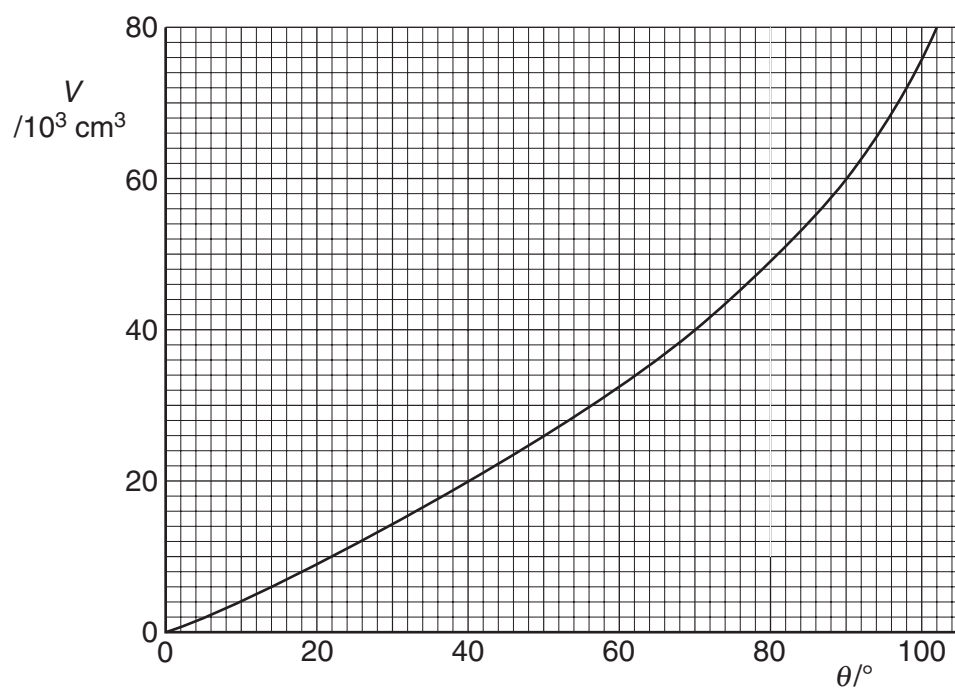


Fig. 1.2

(a) On Fig. 1.1,

(i) calibrate the scale at $20 \times 10^3 \text{ cm}^3$ intervals, [2]

(ii) mark a possible position for a volume of $1.0 \times 10^5 \text{ cm}^3$. [1]

(b) Suggest one advantage of this scale, as compared with a uniform scale, for measuring fuel volumes in the tank of the car.

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.....[1]