

- 1 (a) Explain what is meant by the accuracy of a measured value.

..... [1]

- (b) Two solid cubes, A and B, are measured to determine the density of their materials.

Table 1.1 shows the measurements for cube A.

**Table 1.1**

quantity	measurement
length of side	$(1.53 \pm 0.01) \text{ cm}$
mass	$(31.3 \pm 0.5) \text{ g}$

- (i) Show that the calculated density of the material of cube A is  $8.7 \times 10^3 \text{ kg m}^{-3}$ .

[2]

- (ii) Calculate the percentage uncertainty in the density of the material of cube A.

$$\text{percentage uncertainty} = \dots \% \quad [2]$$

- (iii) The density of the material of cube B is determined to be  $9.2 \times 10^3 \text{ kg m}^{-3} \pm 6\%$ .

State and explain whether cube A and cube B could be made from the same material.

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.....  
..... [2]