

5 A student uses a balance to measure the mass of an object.

This is the student's method.

- adjust the balance so that it displays a reading of zero
- place the object on the balance and record the reading

The student repeats this measurement several times.

(a) What is improved by adjusting the balance to give a reading of zero before the object is placed on it?

(1)

- ☐ **A** accuracy of the measurement
- ☐ **B** precision of the measurement
- ☐ **C** reliability of the measurement
- ☐ **D** validity of the measurement

(b) What is improved by repeating the measurement?

(1)

- ☐ **A** accuracy of the measurement
- ☐ **B** precision of the measurement
- ☐ **C** reliability of the measurement
- ☐ **D** validity of the measurement

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- (c) The student measures the mass of the object using six different balances.

The table shows the student's results.

Mass in g
18.96
19.01
19.05
18.98
19.34
19.04

- (i) Draw a circle around the anomalous reading in the table.

(1)

- (ii) Calculate the mean mass of the object.

(3)

mean mass = g

- (iii) State what other measurement the student would need to make to determine the density of the object.

(1)

(Total for Question 5 = 7 marks)

