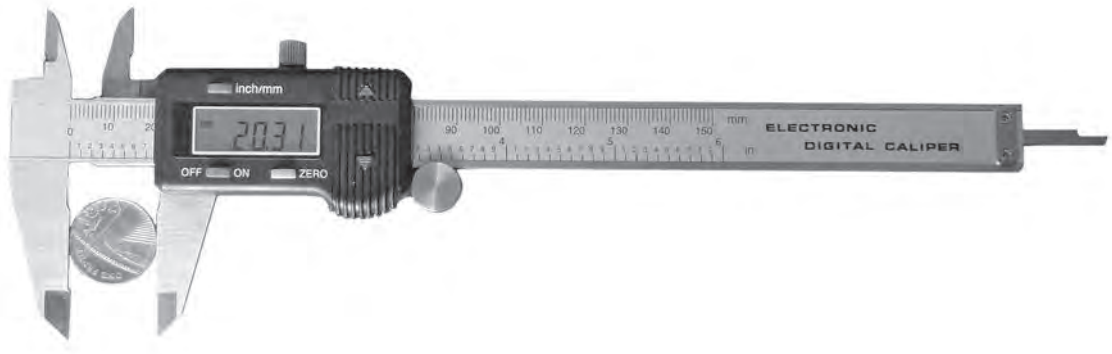
4 A student measures the diameter of a coin.

She uses the digital caliper shown in the photograph.



The digital caliper gives readings to the nearest 0.01 mm.

(a) The student measures the diameter of the coin eight times.

Her readings are shown below.

(i) Circle the anomalous reading.

(1)

(ii) Calculate the average diameter of the coin.

(3)

Average = ... mm

(b) The student wants to find the thickness of a coin.

She takes several similar coins and measures them together as shown.

She says:

If I measure all the coins at once and divide this value by the number of coins it will be more accurate.

Do you agree with the student?

Explain why.

(2)

(c) The student wants to find the density of the coin.

She uses her values for the diameter and thickness of the coin to calculate its volume.

What else must she do to find the density of the coin?

(3)

(Total for Question 4 = 9 marks)