3. Morgan is investigating the body length, b centimetres, of squirrels.

A random sample of 8 squirrels is taken and the data for each squirrel is coded using

$$x = \frac{b - 21}{2}$$

The results for the coded data are summarised below

$$\sum x = -1.2 \qquad \sum x^2 = 5.1$$

(a) Find the mean of b

(3)

(b) Find the standard deviation of b

(3)

A 9th squirrel is added to the sample. Given that for all 9 squirrels $\sum x = 0$

(c) find

(i) the body length of the 9th squirrel,

(2)

(ii) the standard deviation of x for all 9 squirrels.

(2)

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Question 3 continued

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Question 3 continued

(Total for Question 3 is 10 marks)