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Answer ALL questions. Write your answers in the spaces provided.

1. The heights, x metres, of 40 children were recorded by a teacher. The results are summarised as follows

$$\sum x = 58 \quad \sum x^2 = 84.829$$

(a) Find the mean and the variance of the heights of these 40 children.

(3)

The teacher decided that these statistics would be more useful in centimetres.

(b) Find

(i) the mean of these heights in centimetres,

(ii) the standard deviation of these heights in centimetres.

(2)

Two more children join the group. Their heights are 130 cm and 160 cm.

(c) (i) State, giving a reason, the mean height of the 42 children.

(ii) Without recalculating the standard deviation, state, giving a reason, whether the standard deviation of the heights of the 42 children will be greater than, less than or the same as the standard deviation of the heights of the group of 40 children.

(4)

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Question 1 continued

Q1

(Total 9 marks)