2 Twenty children were asked to estimate the height of a particular tree. Their estimates, in metres, were as follows.

| 4.1 | 4.2 | 4.4 | 4.5 | 4.6 | 4.8 | 5.0 | 5.2 | 5.3 | 5.4 |
| 5.5 | 5.8 | 6.0 | 6.2 | 6.3 | 6.4 | 6.6 | 6.8 | 6.9 | 19.4 |

(a) Find the mean of the estimated heights. [1]

(b) Find the median of the estimated heights. [1]

(c) Give a reason why the median is likely to be more suitable than the mean as a measure of the central tendency for this information. [1]

3 A sports club has a volleyball team and a hockey team. The heights of the 6 members of the volleyball team are summarised by $\Sigma x = 1050$ and $\Sigma x^2 = 193\,700$, where x is the height of a member in cm. The heights of the 11 members of the hockey team are summarised by $\Sigma y = 1991$ and $\Sigma y^2 = 366\,400$, where y is the height of a member in cm.

(a) Find the mean height of all 17 members of the club. [2]

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(b) Find the standard deviation of the heights of all 17 members of the club. [3]

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1   For n values of the variable x, it is given that

$$\Sigma(x - 50) = 144 \quad \text{and} \quad \Sigma x = 944.$$

Find the value of n.   [3]

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1 For n values of the variable x, it is given that

$$\Sigma(x - 200) = 446 \quad \text{and} \quad \Sigma x = 6846.$$

Find the value of n. [3]

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1 50 values of the variable x are summarised by

$$\Sigma(x - 20) = 35 \qquad \text{and} \qquad \Sigma x^2 = 25\,036.$$

Find the variance of these 50 values. [3]

2   A summary of 40 values of x gives the following information:

$$\Sigma(x - k) = 520, \qquad \Sigma(x - k)^2 = 9640,$$

where k is a constant.

(a)   Given that the mean of these 40 values of x is 34, find the value of k.   [2]

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(b)   Find the variance of these 40 values of x.   [2]

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1 A summary of 50 values of x gives

$$\Sigma(x - q) = 700, \qquad \Sigma(x - q)^2 = 14\,235,$$

where q is a constant.

(a) Find the standard deviation of these values of x. [2]

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(b) Given that $\Sigma x = 2865$, find the value of q. [2]

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