3. Jim records the length, l mm, of 81 salmon. The data are coded using $x = l - 600$ and the following summary statistics are obtained.

$$n = 81 \qquad \sum x = 3711 \qquad \sum x^2 = 475\,181$$

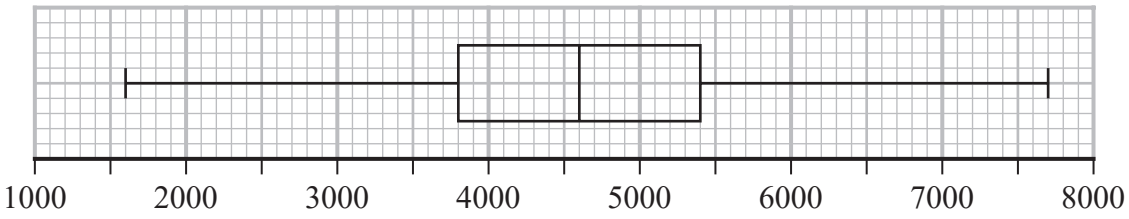
(a) Find the mean length of these salmon.

(3)

(b) Find the variance of the lengths of these salmon.

(2)

The weight, w grams, of each of the 81 salmon is recorded to the nearest gram.
The recorded results for the 81 salmon are summarised in the box plot below.



Weight of salmon (w grams)

(c) Find the maximum number of salmon that have weights in the interval

$$4600 < w \leqslant 7700$$

(1)

Raj says that the box plot is incorrect as Jim has not included outliers.

For these data an outlier is defined as a value that is more than

$1.5 \times$ IQR above the upper quartile or $1.5 \times$ IQR below the lower quartile

(d) Show that there are no outliers.

(3)

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Question 3 continued

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Question 3 continued

(Total for Question 3 is 9 marks)