

3. Edward is practising statistical calculations using values from the large data set.

He selects a random day from June 1987 and calculates the following summary statistics for the Daily Mean Temperature, $x^{\circ}\text{C}$, for that day from the 8 locations in the large data set.

$$S_{xx} = 133 \qquad \sum x^2 = 2311$$

- (a) Using these statistics,
 - (i) show that the mean of x is 16.5 (3)
 - (ii) find the standard deviation of x (2)

Edward now studies the Daily Mean Visibility, v , for the same day in June 1987
He codes the data for 5 locations in the large data set using

$$y = \frac{v}{100} - 20$$

- and finds that the mean of y is 10.6 and the standard deviation of y is 12.6
- (b) (i) Show that the mean of v is 3060 (2)
 - (ii) Find the standard deviation of v (1)
 - (c) Using your knowledge of the large data set,
 - (i) state the units for v (1)
 - (ii) state, giving a reason, a location in the large data set that Edward could **not** use for his Daily Mean Visibility calculations. (1)