







2. A random sample of 15 days is taken from the large data set for Perth in June and July 1987. The scatter diagram in Figure 1 displays the values of two of the variables for these 15 days.

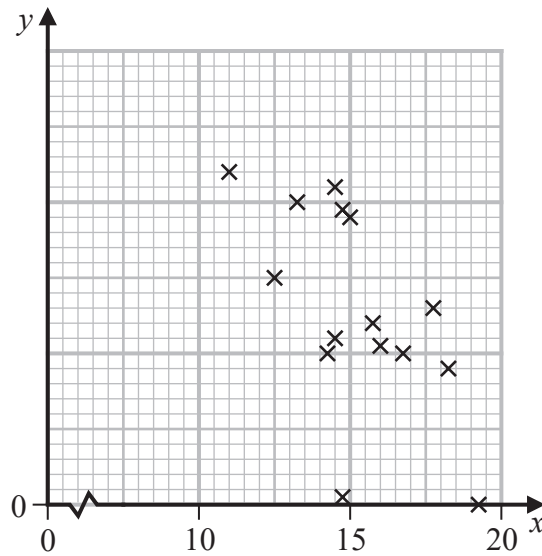


Figure 1

- (a) Describe the correlation.

(1)

The variable on the  $x$ -axis is Daily Mean Temperature measured in  $^{\circ}\text{C}$ .

- (b) Using your knowledge of the large data set,

- (i) suggest which variable is on the  $y$ -axis,
- (ii) state the units that are used in the large data set for this variable.

(2)

Stav believes that there is a correlation between Daily Total Sunshine and Daily Maximum Relative Humidity at Heathrow.

He calculates the product moment correlation coefficient between these two variables for a random sample of 30 days and obtains  $r = -0.377$

- (c) Carry out a suitable test to investigate Stav's belief at a 5% level of significance. State clearly

- your hypotheses
- your critical value

(3)

On a random day at Heathrow the Daily Maximum Relative Humidity was 97%

- (d) Comment on the number of hours of sunshine you would expect on that day, giving a reason for your answer.

(1)

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