# Data Presentation and Interpretation

7 The daily mean pressure, p (measured in hPa), in Leeming was recorded for 10 days in June 2015.
The data was coded using $q = \dfrac{p - 1000}{2}$ and the summary statistics for q were $\sum q = 104$ and $\sum q^2 = 1492$.

Find the mean and standard deviation of the original data.

mean = ... hPa, standard deviation = ... hPa

(4 marks)

8 Some ecologists carry out an investigation into the reindeer populations at different locations.
They also recorded the human population density at the same locations.
Their results are displayed in the scatter diagram below.
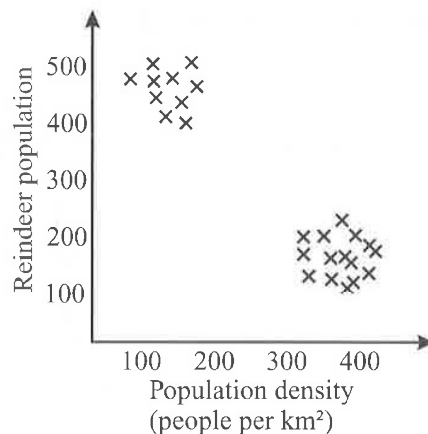
a) Jiao claims that there is negative correlation between human population density and reindeer population.
Use the scatter diagram to comment on Jiao's claim.

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....

....

(2 marks)

b) Killian claims that more people living in an area cause there to be fewer reindeer in that area.
Do you agree with Killian's claim? Explain your answer.

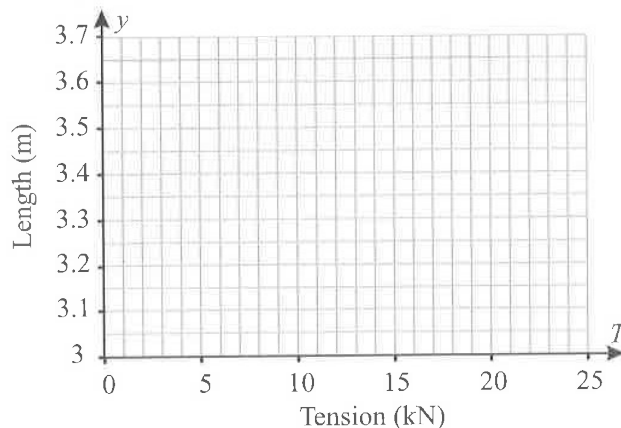...

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(2 marks)

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9 A construction company measures the length, y metres, of a cable when put under different amounts of tension, T kN (kilonewtons). The results of its tests are shown below.

T (kN)	1	2	3	5	8	10	12	15	20
y (metres)	3.05	3.1	3.13	3.15	3.27	3.4	3.1	3.5	3.6

a) Draw a scatter diagram to show these results.

Length (m)

Tension (kN)

(2 marks)

b) One of the readings has been recorded inaccurately. Put a ring around this reading on your graph.

(1 mark)

c) Describe the correlation shown on your scatter diagram.

....

(1 mark)

An engineer believes a linear regression line of the form $y = a + bT$ could be used to accurately describe the results. She ignores the outlier, and calculates the equation of the regression line to be $y = 3 + 0.03T$.

d) Explain what these values of a and b represent in this context.

....

....

(2 marks)

e) Use the regression line to predict the length of the cable when put under a tension of 30 kilonewtons.

.... m

(1 mark)

f) Comment on the reliability of your estimate for part e).

....

....

(1 mark)

EXAM TIP

You'll be given the method to find outliers in the question (or be asked to spot them on a graph) — but you need to know what to do with them. You might have to decide whether to include them in your analysis or exclude them — think about what effect they have on different measures, and whether they're likely to be errors in recording or actual unusual results.

Score

67