

Self-assessment: 16 Summarising data

1. Find the inter-quartile range of the following set of data:

11, 36, 71, 44, 84, 62, 87, 54, 21

(accessible to students on the path to grade 3 or 4) [3 marks]

2. The mean Maths grade of a class of 15 students is 5.2. Another student joins the class; his Maths grade is 4. Find the new mean grade for the class.

(accessible to students on the path to grade 3 or 4) [4 marks]

3. The table shows the maximum daily temperature and the income of a cold drinks salesman on eight randomly selected days in July.

Temperature (°C)	22	26	25	31	26	18	27	31
Income (£)	86.40	71.20	85.00	92.85	66.50	42.45	71.00	88.45

- Find the mean and the standard deviation of the income data.
- Find the correlation coefficient between the temperature and the income.
- Find the equation of the regression line of income on temperature.
- Estimate the income on a day when the temperature is 29°C.
- Explain why your regression line cannot be used to estimate the income on a day when the temperature is 14°C.

(accessible to students on the path to grade 3 or 4) [8 marks]

4. All students in a class recorded how long, in minutes, it took them to travel to school that morning. The results are summarised in a cumulative frequency table:

Time in minutes (t)	Cumulative frequency
$0 < t \leq 6$	0
$0 < t \leq 10$	6
$0 < t \leq 15$	12
$0 < t \leq 20$	22
$0 < t \leq 30$	38
$0 < t \leq 45$	45

- (a) Fill in the following frequency table:

Time in minutes (t)	Frequency
$6 < t \leq 10$	6
$10 < t \leq 15$	
$15 < t \leq 20$	
$20 < t \leq 30$	
$30 < t \leq 45$	

- (b) Calculate an estimate for the mean and variance of the data.
 (c) Explain why your answer is only an estimate.

(accessible to students on the path to grade 5 or 6) [10 marks]

5. Aseem records his monthly expenditure over one whole year in order to help him plan his budget. He finds that his average monthly expenditure for the eight months from January to August is \$620 and that his average monthly expenditure over the whole year is \$586. What was his average monthly expenditure for the four months from September to December?

(accessible to students on the path to grade 7) [5 marks]