

- 1 Adam is measuring the heights in cm of his tomato plants.

Height (cm)	Frequency
$140 < h \leq 150$	7
$150 < h \leq 160$	10
$160 < h \leq 170$	15
$170 < h \leq 180$	19
$180 < h \leq 200$	9

- (a) Use linear interpolation to estimate the median height.

(2)

- (b) Estimate the mean height.

(2)

(c) Estimate the standard deviation.

(2)

(Total for question 1 is 6 marks)

- 2 A company is investigating how long it takes employees, t minutes, to get to an event. They produce a table below of coded times, x minutes, for a random sample of 50 employees.

Coded Time (minutes)	Frequency
$0 < x \leq 5$	1
$5 < x \leq 10$	9
$10 < x \leq 15$	19
$15 < x \leq 25$	14
$25 < x \leq 40$	7

- (a) Use linear interpolation to estimate the median of the coded times.

(2)

- (b) Estimate the standard deviation of the coded times.

(2)

(c) The coded data was calculated using the formula: $x = \frac{t-20}{2}$

Calculate the median and the standard deviation of t .

(3)

(Total for question 2 is 7 marks)

- 3 The distance travelled by 100 people to an event is summarised below.

Distance (nearest mile)	Frequency
0 – 9	4
10 – 19	19
20 – 29	41
30 – 39	26
40 – 49	9
50 – 59	1

You may use: $\sum fx = 2651$ and $\sum fx^2 = 80434.25$

- (a) Use linear interpolation to estimate the median distance.

(2)

- (b) Estimate the mean distance.

(2)

(c) Estimate the standard deviation.

(2)

(Total for question 3 is 6 marks)

- 4 The times 12 athletes took to run 400m is summarised in the table below.

Athlete	A	B	C	D	E	F	G	H	A	I	J	K
Time (s)	45.2	46.9	46.1	46.2	45.4	45.1	47.8	45.4	45.5	46.1	46.4	45.7

- (a) Find the mean time taken.

(2)

- (b) Find the standard deviation for these times.

(2)

- (c) Find the median, upper and lower quartiles of these data.

(3)

(Total for question 4 is 7 marks)

- 5** Adam asked every teacher at his school how long it took them to travel to work. Adam's results are summarised in the summary statistics below.

$$n = 84 \quad \sum x = 3581 \quad \sum x^2 = 184\,092$$

Calculate the mean and the standard deviation for these data.

(Total for question 5 is 3 marks)

- 6** Frank asked every teacher at his school how long it took them to travel to work. Frank's results are summarised in the summary statistics below.

$$n = 70 \quad \sum x = 1587 \quad S_{xx} = 4879$$

Calculate the mean and the standard deviation for these data.

(Total for question 6 is 3 marks)

- 7** 30 people ran a race and their race times, x , were recorded.

For these people $\sum x = 466 \quad \sum x^2 = 7592$

Calculate the mean and the standard deviation for these data.

(Total for question 7 is 3 marks)