1 The maximum temperatures x degrees Celsius recorded during each month of 2005 in Cambridge are given in the table below.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
9.2	7.1	10.7	14.2	16.6	21.8	22.0	22.6	21.1	17.4	10.1	7.8

These data are summarised by $n = 12$, $\Sigma x = 180.6$, $\Sigma x^2 = 3107.56$.

(i) Calculate the mean and standard deviation of the data. [3]

(ii) Determine whether there are any outliers. [3]

(iii) The formula $y = 1.8x + 32$ is used to convert degrees Celsius to degrees Fahrenheit. Find the mean and standard deviation of the 2005 maximum temperatures in degrees Fahrenheit. [3]

(iv) In New York, the monthly maximum temperatures are recorded in degrees Fahrenheit. In 2005 the mean was 63.7 and the standard deviation was 16.0. Briefly compare the maximum monthly temperatures in Cambridge and New York in 2005. [2]

The total numbers of hours of sunshine recorded in Cambridge during the month of January for each of the last 48 years are summarised below.

Hours h	$70 \leqslant h < 100$	$100 \leqslant h < 110$	$110 \leqslant h < 120$	$120 \leqslant h < 150$	$150 \leqslant h < 170$	$170 \leqslant h < 190$
Number of years	6	8	10	11	10	3

(v) Draw a cumulative frequency graph for these data. [5]

(vi) Use your graph to estimate the 90th percentile. [2]

2 Every day, George attempts the quiz in a national newspaper. The quiz always consists of 7 questions. In the first 25 days of January, the numbers of questions George answers correctly each day are summarised in the table below.

Number correct	1	2	3				
Frequency	1	2	3				

(i) Draw a vertical line chart to illustrate the data. [2]

(ii) State the type of skewness shown by your diagram. [1]

(iii) Calculate the mean and the mean squared deviation of the data. [3]

(iv) How many correct answers would George need to average over the next 6 days if he is to achieve an average of 5 correct answers for all 31 days of January? [2]

3 **Answer part (i) of this question on the insert provided.**

A taxi driver operates from a taxi rank at a main railway station in London. During one particular week he makes 120 journeys, the lengths of which are summarised in the table.

Length (x miles)	$0 < x \leqslant 1$	$1 < x \leqslant 2$	$2 < x \leqslant 3$	$3 < x \leqslant 4$	$4 < x \leqslant 6$	$6 < x \leqslant 10$
Number of journeys	38	30	21	14	9	8

(i) On the insert, draw a cumulative frequency diagram to illustrate the data. [3]

(ii) Use your graph to estimate the median length of journey and the quartiles.

Hence find the interquartile range. [4]

(iii) State the type of skewness of the distribution of the data. [1]