1. The company *Seafield* requires contractors to record the number of hours they work each week. A random sample of 38 weeks is taken and the number of hours worked per week by contractor Kiana is summarised in the stem and leaf diagram below.

Stem	Leaf											
1	4	4	4	5	5	5	6	6	9	9	9	(11)
2	1	2	2	3	3	4	4	4	w	9		(10)
3	2	3	4	4	5	6	7	7	7	9		(10)
4	1	1	2	3								(4)
5	1	9										(2)
6	4											(1)

Key : 3|2 means 32

The quartiles for this distribution are summarised in the table below.

Q_1	Q_2	Q_3
x	26	y

(a) Find the values of w, x and y

(3)

Kiana is looking for outliers in the data. She decides to classify as outliers any observations greater than

$$Q_3 + 1.0 \times (Q_3 - Q_1)$$

(b) Showing your working clearly, identify any outliers that Kiana finds.

(2)

(c) Draw a box plot for these data in the space provided on the grid opposite.

(3)

(d) Use the formula

$$\text{skewness} = \frac{(Q_3 - Q_2) - (Q_2 - Q_1)}{(Q_3 - Q_1)}$$

to find the skewness of these data. Give your answer to 2 significant figures.

(2)

Kiana's new employer, *Landacre*, wishes to know the average number of hours per week she worked during her employment at *Seafield* to help calculate the cost of employing her.

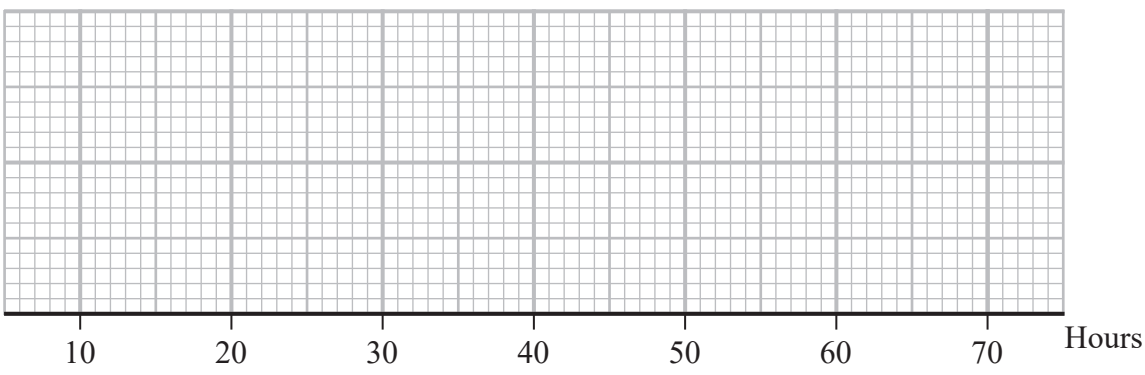
(e) Explain why *Landacre* might prefer to know Kiana's mean, rather than median, number of hours worked per week.

(1)

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

Question 1 continued



Turn over for a spare grid if you need to redraw your box plot.

Question 1 continued

DO NOT WRITE IN THIS AREA

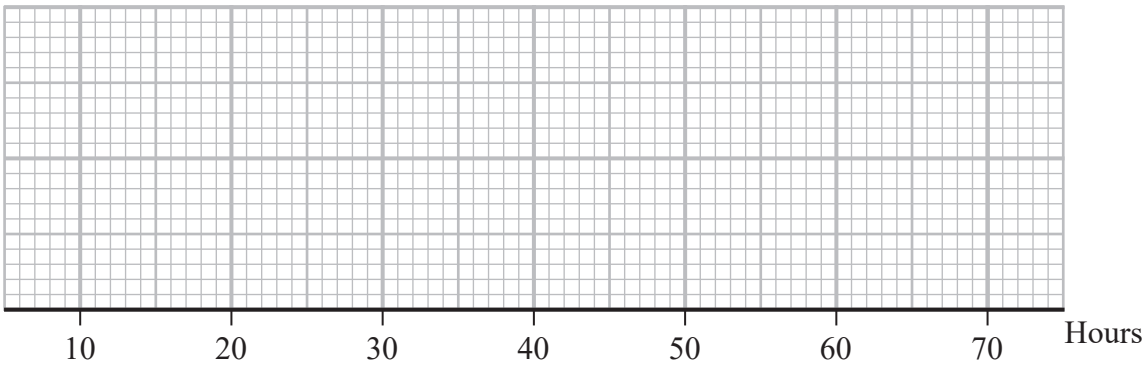
DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

Question 1 continued

Only use this grid if you need to redraw your box plot.



(Total for Question 1 is 11 marks)