Data Representation and Spread – 2021 AS Nov S1

1. Nov/2021/Paper_9709/51/6

The weights, in kg, of 15 rugby players in the Rebels club and 15 soccer players in the Sharks club are shown below.

Rebels	75	78	79	80	82	82	83	84	85	86	89	93	95	99	102
Sharks	66	68	71	72	74	75	75	76	78	83	83	84	85	86	92

(a) Represent the data by drawing a back-to-back stem-and-leaf diagram with Rebels on the left-hand side of the diagram. [4]

(b) Find the median and the interquartile range for the Rebels. [3]

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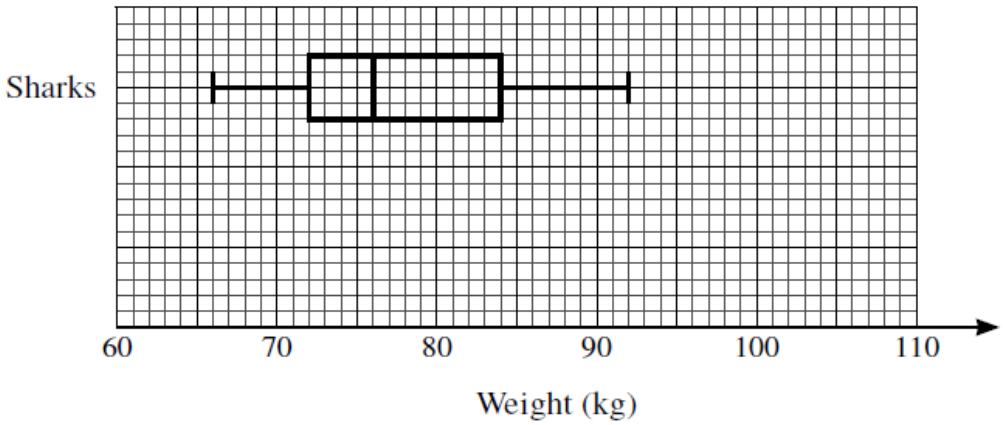
A box-and-whisker plot for the Sharks is shown below.



(c) On the same diagram, draw a box-and-whisker plot for the Rebels. [2]

(d) Make one comparison between the weights of the players in the Rebels club and the weights of the players in the Sharks club. [1]

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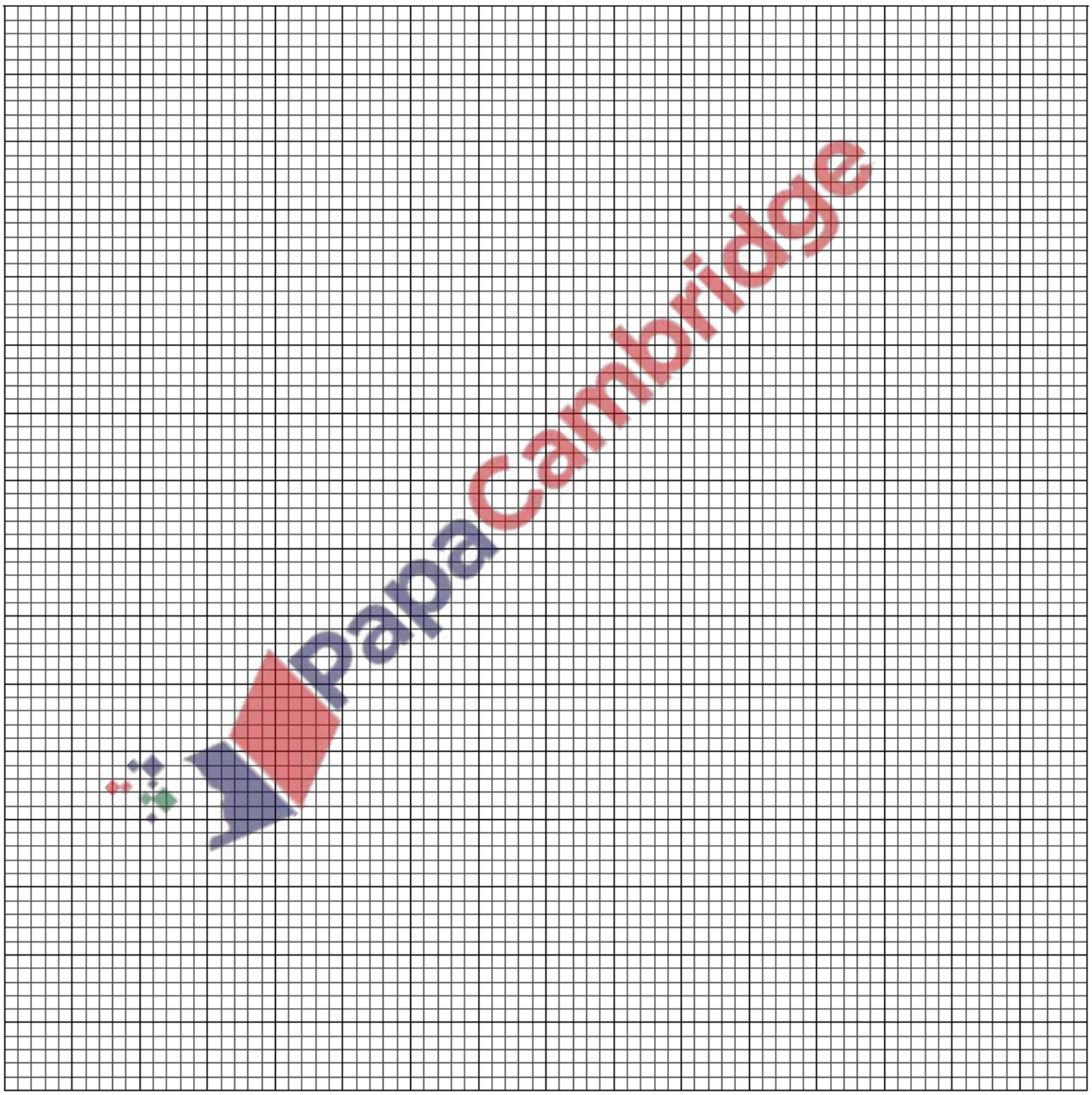
2. Nov/2021/Paper_9709/52/7

The distances, x m, travelled to school by 140 children were recorded. The results are summarised in the table below.

Distance, x m	$x \leqslant 200$	$x \leqslant 300$	$x \leqslant 500$	$x \leqslant 900$	$x \leqslant 1200$	$x \leqslant 1600$
Cumulative frequency	16	46	88	122	134	140

(a) On the grid, draw a cumulative frequency graph to represent these results. [2]



(b) Use your graph to estimate the interquartile range of the distances. [2]

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(c) Calculate estimates of the mean and standard deviation of the distances. [6]

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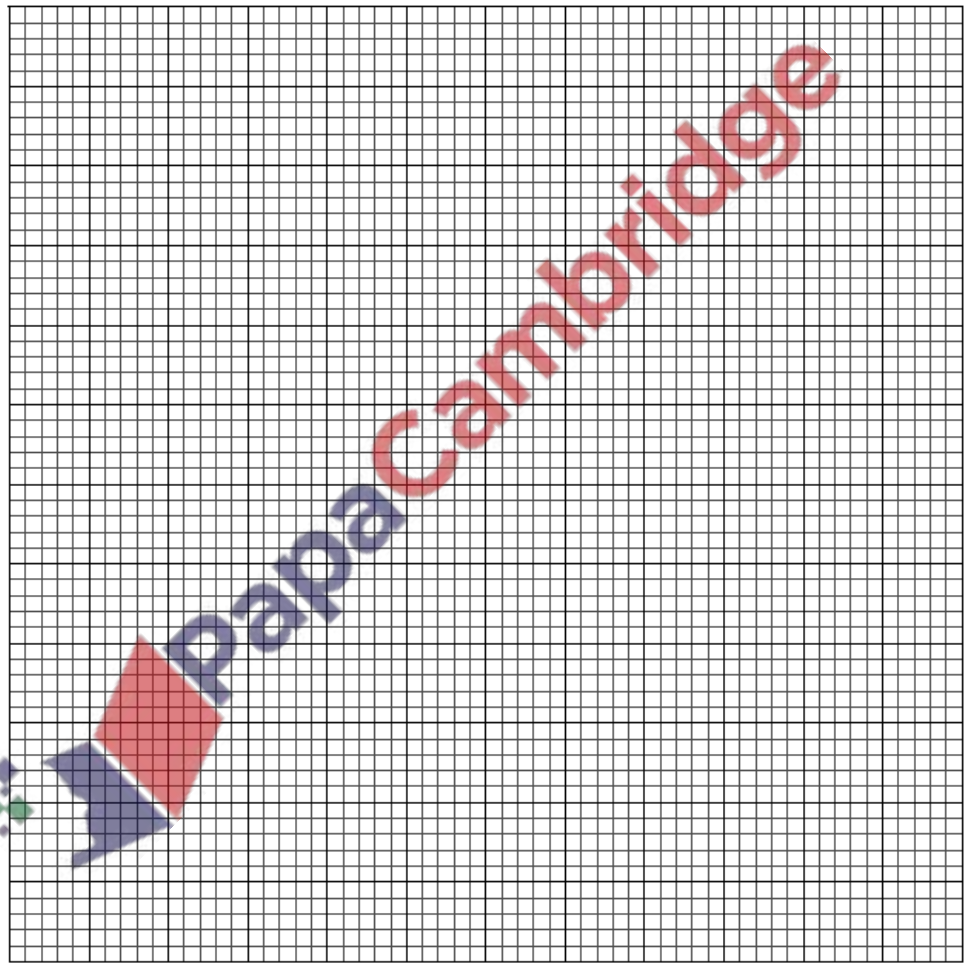
3. Nov/2021/Paper_9709/53/2

The times taken, in minutes, by 360 employees at a large company to travel from home to work are summarised in the following table.

Time, t minutes	$0 \leqslant t < 5$	$5 \leqslant t < 10$	$10 \leqslant t < 20$	$20 \leqslant t < 30$	$30 \leqslant t < 50$
Frequency	23	102	135	76	24

(a) Draw a histogram to represent this information. [4]



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(b) Calculate an estimate of the mean time taken by an employee to travel to work. [2]