

10. A company is considering changes to its price list for delivering parcels in a local area. The company is considering a charge based on the distance between the warehouse and the destination of the parcel. The table gives the grouped frequency distribution for the distances, measured to the nearest km, for 60 parcels.

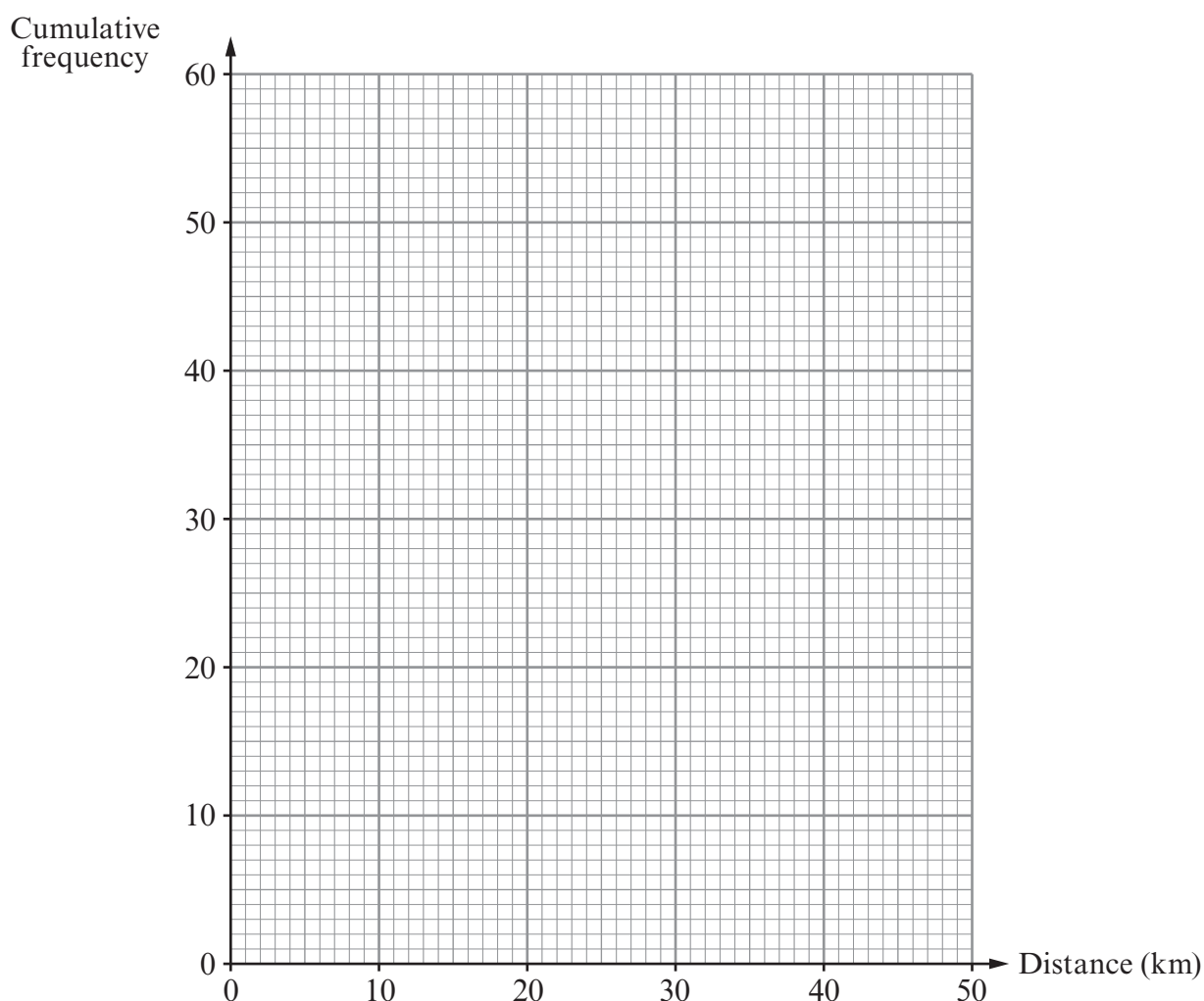
Distance, to the nearest km	1 - 10	11 - 20	21 - 30	31 - 40
Number of parcels	10	30	15	5

- (a) Complete the following cumulative frequency table.

Distance (km)	<0.5	<10.5	<20.5	<30.5	<40.5
Cumulative frequency	0	10			

[1]

- (b) On the graph paper below, draw a cumulative frequency diagram to show this information.



[2]

- (c) Use your cumulative frequency diagram to find an estimate for the median and the interquartile range of the delivery distances.  
You **must** show your working.

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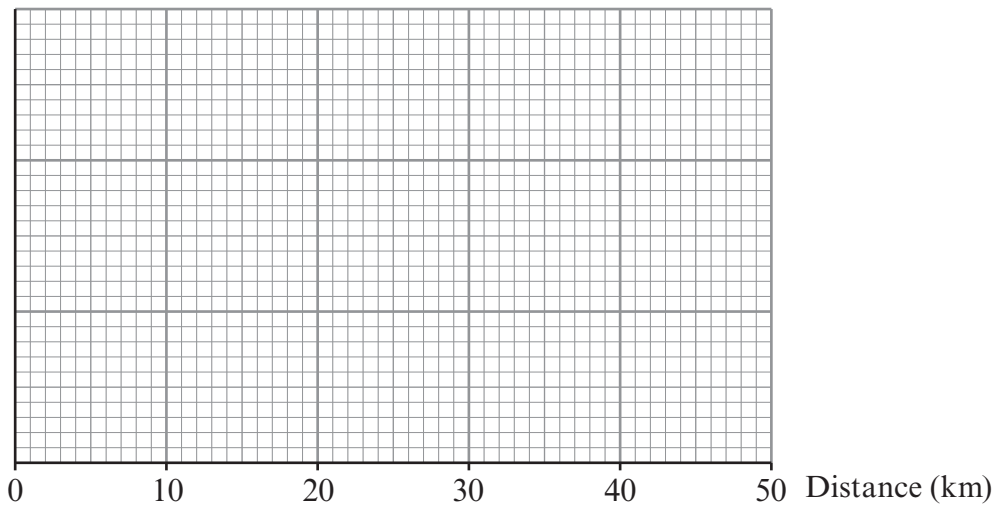
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Median ..... Interquartile range .....

[3]

- (d) For these 60 parcels, the shortest delivery distance is 2km and the longest delivery distance is 37km.  
Draw a box and whisker diagram to illustrate this information.



[4]

- (e) Previously, the delivery charge was £2 for each parcel.  
The new pricing plan being considered is:
  - free delivery for all parcels up to the median delivery distance;
  - £4 per parcel for all other deliveries.

Would you expect the company to profit from the new pricing for parcel delivery?  
Explain your answer.

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[3]