

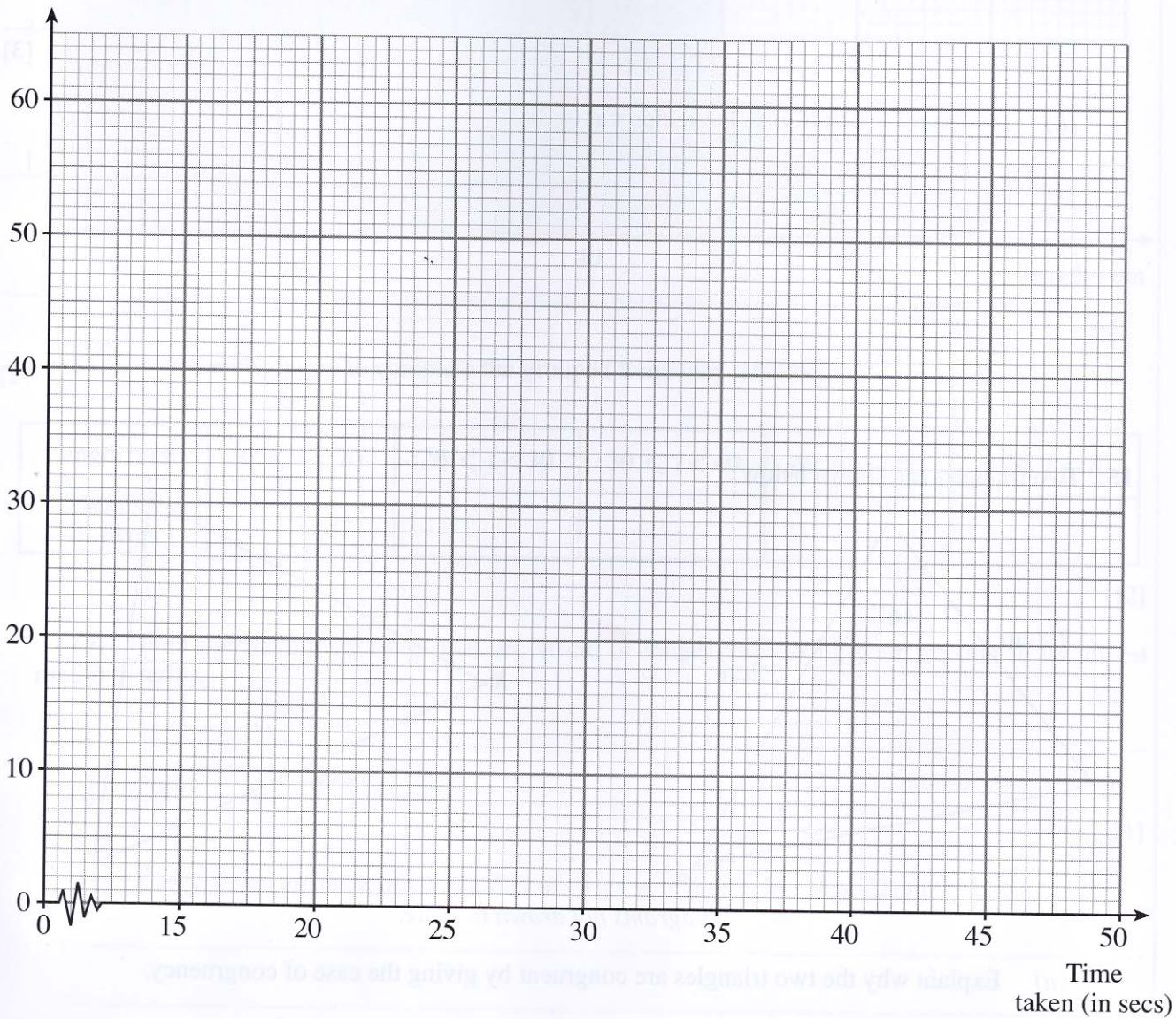
13. A task was given to 60 volunteers and the times they took, in seconds, to complete the task were recorded. The following is a cumulative frequency table of the results.

Time taken to complete the task (less than)	15	20	25	30	35	40	45	50
Cumulative frequency	0	3	9	18	37	52	57	60

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

[3]

Cumulative
frequency



- (b) Use your cumulative frequency diagram to find the interquartile range.

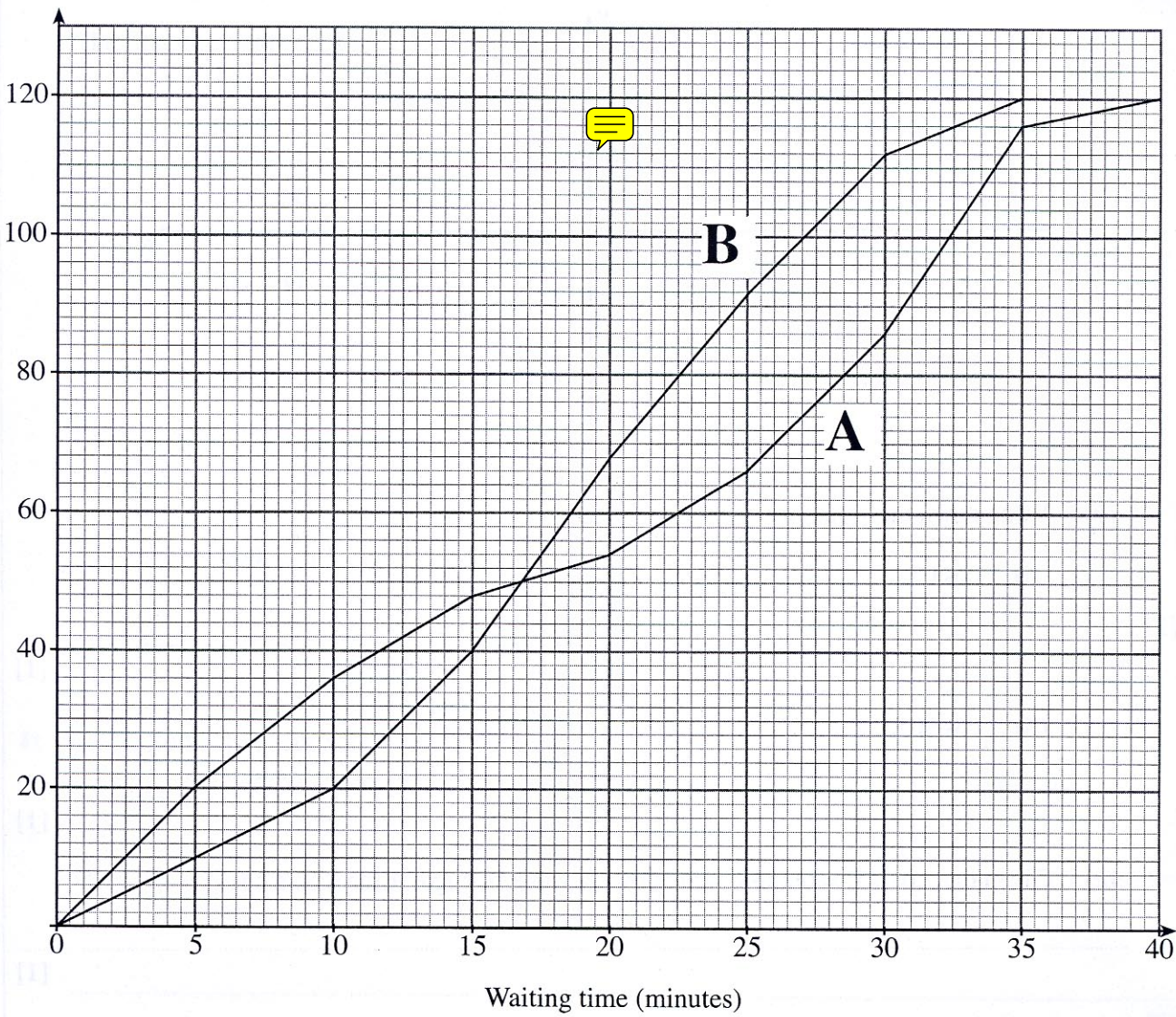
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13. Two clinics, labelled **A** and **B**, record the waiting time, in minutes, before treatment for each of their 120 patients. Cumulative frequency polygons for waiting times at clinics **A** and **B** are shown below.

Cumulative frequency



Use the cumulative frequency polygons to answer the following questions.

(a) Find which clinic has the shorter median waiting time and by how many minutes.

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[2]

(b) At which clinic are you more likely to have to wait longer than 30 minutes before you are treated? Explain clearly how you came to your decision.

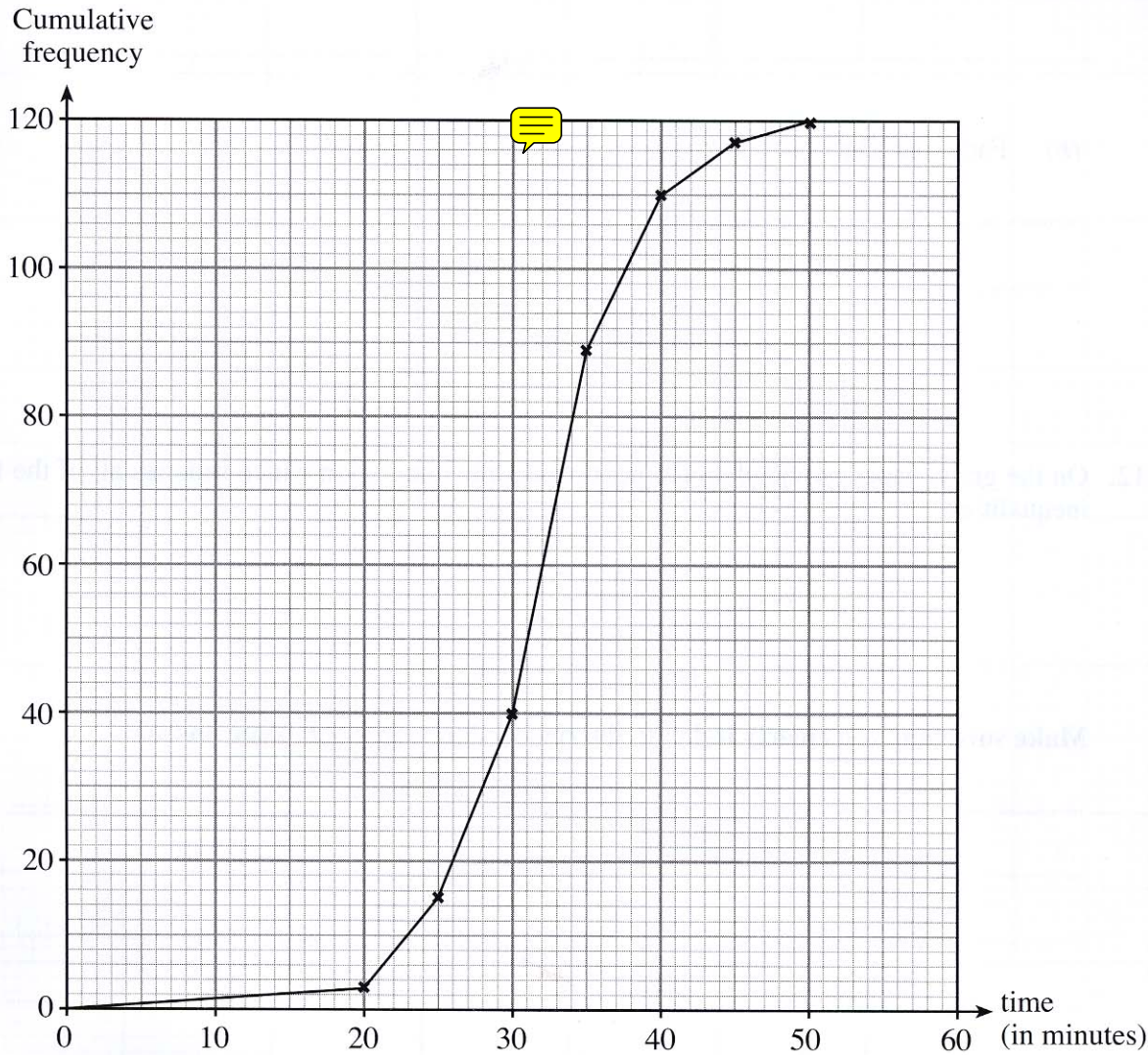
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[2]

10. The times taken, in minutes, by 120 people to complete a task were recorded. Below is a cumulative frequency polygon of the results.



Use the cumulative frequency polygon to find

- (a) the median time taken to complete the task,

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[1]

- (b) how many people took more than 38 minutes to complete the task.

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[2]

9. The times taken by 160 pupils to travel to school were measured and the results are summarised in the following table.

Time taken (to the nearest minute)	1-10	11-20	21-30	31-40	41-50	51-60	61-70
Number of pupils	12	56	44	20	16	8	4

- (a) Complete the following cumulative frequency table.

Time taken (less than)	10.5	20.5	30.5	40.5	50.5	60.5	70.5
Cumulative frequency							

[1]

- (b) On the graph paper opposite, draw a cumulative frequency diagram to show this information. [3]

- (c) Use your cumulative frequency diagram to find the interquartile range.

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[2]

- (d) Use your cumulative frequency diagram to complete the following statement.

60% of the pupils took less than minutes to travel to school.

[1]

10. A group of 120 volunteers were invited to complete an experiment. The time taken, measured to the nearest minute, by each volunteer was noted and the results were as shown in the following table.

Time taken (to the nearest minute)	11-15	16-20	21-25	26-30	31-35	36-40	41-45
Number of volunteers	2	12	26	48	20	9	3

- (a) Complete the following cumulative frequency table.

Time taken (less than)	10.5	15.5	20.5	25.5	30.5	35.5	40.5	45.5
Cumulative frequency	0							

[1]

- (b) On the graph paper opposite, draw a cumulative frequency diagram to show this information. [3]
- (c) Use your cumulative frequency diagram and the interquartile range.

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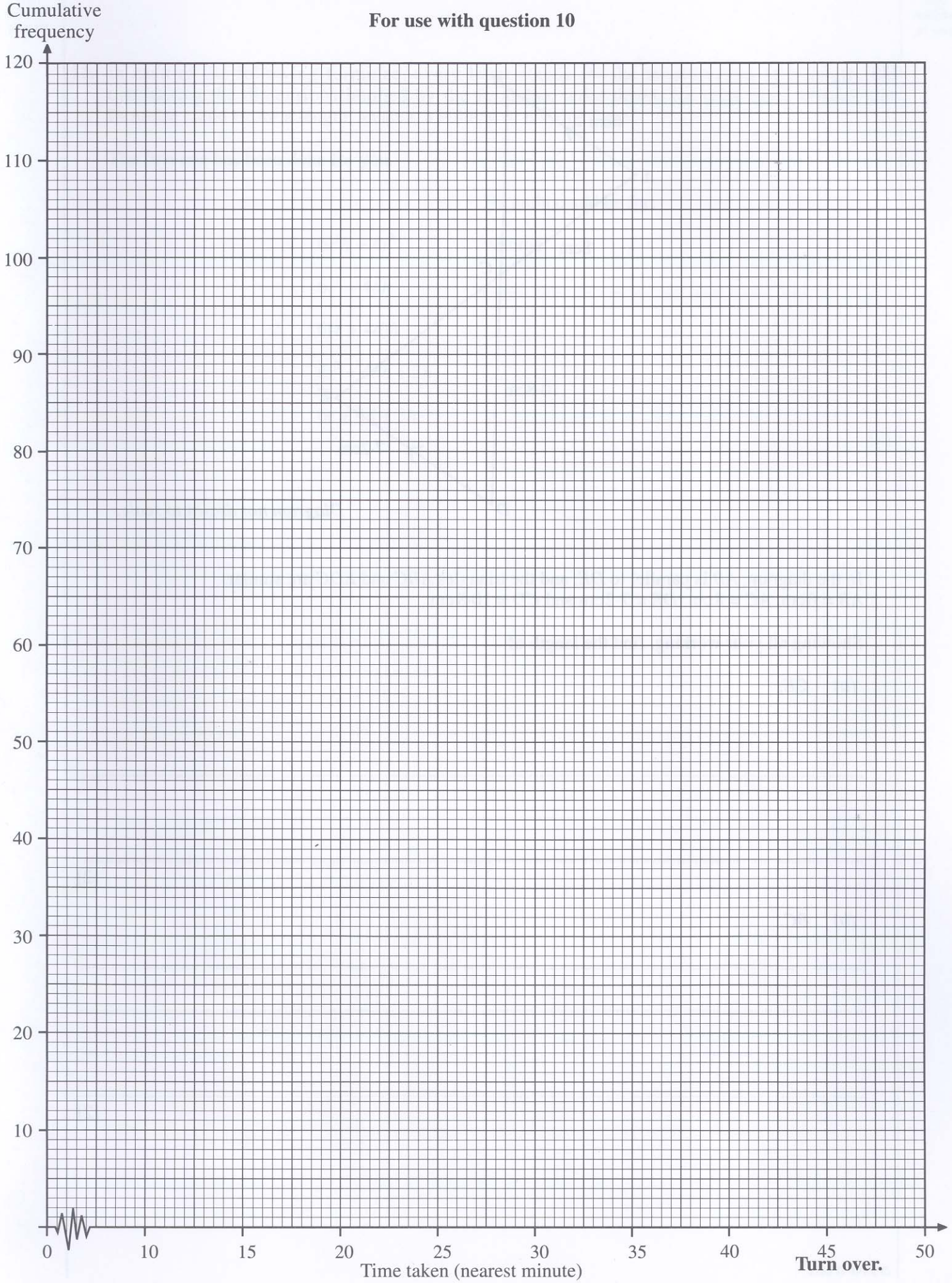
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[2]

- (d) Use your cumulative frequency diagram to complete the following statement.

80% of the volunteers took less than minutes to complete the experiment. [1]

For use with question 10



Turn over.