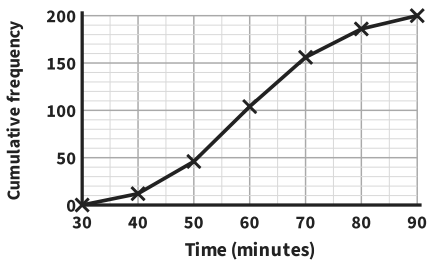
Cumulative Frequency *extend*

1

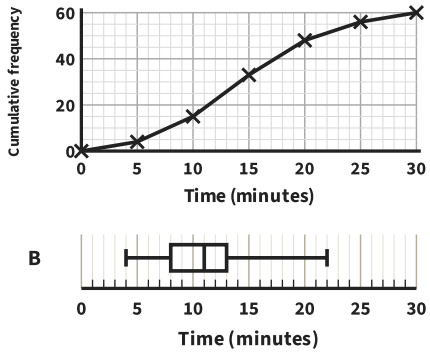
The graph shows the times of 200 runners in a 10 km race. Estimate the percentage of the runners whose average speed was less than 8 km/h.



Percentage _____

2

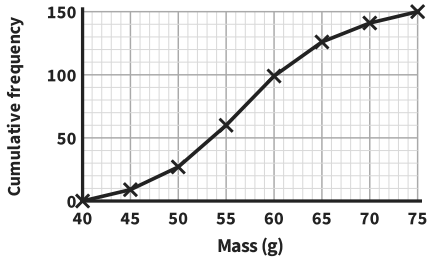
Group A's times on a puzzle (60 people) are in the graph, group B's in the box plot. Compare the groups.



Compare _____

3

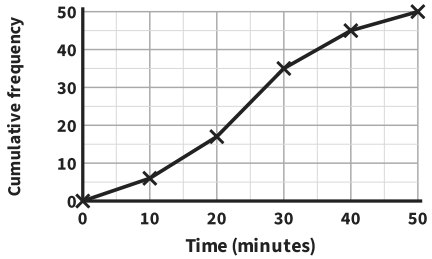
The graph shows the masses of 150 eggs. The lightest 10% and the heaviest 10% are taken out. Estimate the range of the rest.



Answer _____

4

The graph shows how long 50 students spent on homework one evening. Estimate the mean time.



Mean _____

5

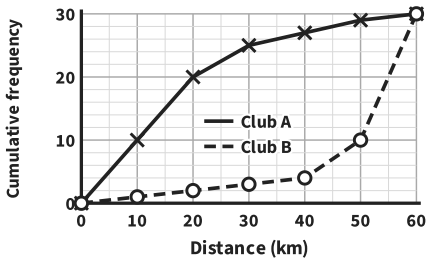
The table shows the times of 100 people. Their cumulative frequency graph, with points joined by straight lines, gives a median of 25 minutes. Find a and b.

Time (min)	Frequency
$0 < t \leq 10$	8
$10 < t \leq 20$	a
$20 < t \leq 30$	30
$30 < t \leq 40$	b
$40 < t \leq 50$	12

Answer _____

6

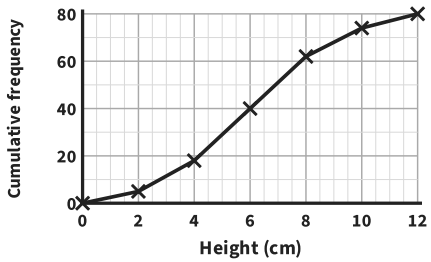
The graphs show how far 30 riders in club A and 30 in club B rode one weekend. Estimate the median of all 60 riders.



Answer _____

7

The graph shows the heights of 80 seedlings. A week later each one is 1.5 times as tall. Estimate the new median and IQR.



Answer _____

8

From a cumulative frequency graph of this table, Jo reads that 9 people took between 22 and 25 minutes. Why is this only an estimate? What is the least and the most it could be?

Time (min)	Frequency
$0 < t \leq 10$	12
$10 < t \leq 20$	14
$20 < t \leq 30$	30
$30 < t \leq 40$	4

Answer _____